RELATIONSHIPS BETWEEN BELIEFS, PERSONALITY AND BEHAVIOUR AT WORK

by

Richard G Ford MA, ABPsS

Thesis submitted to the CNAA in partial fulfilment of the requirements for the award of Doctor of Philosophy.

The Polytechnic of Wales

October 1981

ABSTRACT

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This study presents an investigation into the relationship between occupational beliefs, the occupational persona and occupational behaviour. The purpose of the study was to examine the empirical implications for the author's occupational belief system model of occupational choice and occupational behaviour. The theoretical conception of an occupational belief system is introduced as a model for the personal system of evaluations that individuals place on work. The occupational persona is defined as the expression of that part of the individual that he thinks he reveals publicly at work.

The testing of the model necessitates the development of measures for the occupational persona, occupational beliefs and occupational behaviour. An instrument to measure the occupational persona was developed on a sample of 404 individuals and the data was analysed by a hierarchical factor analytic model with Factored Homogeneous Item Dimensions (FHIDs) as the basic unit of the factor analyses. A sharp structure of 7 factors emerged to describe the occupational persona. An index to measure occupational beliefs was deductively constructed from the theoretically based formulations of the author's occupational belief system. The work orientation concept is introduced as reflecting the beliefs an individual holds about work. Occupational behaviour was measured by career patterns, occupational choice and reasons for leaving jobs.

A second sample of 422 individuals was used to explore the relationships between occupational beliefs, the occupational persona and occupational behaviour. In general, the data do not refute the central propositions of the theory which are that occupational behaviour, occupational beliefs and the occupational persona are all a function and a consequence of each other. However, demographic variables explained more of the occupational behaviour variance, and the author emphasizes the need for crossvalidation studies. The implications of the results for occupational choice theory, occupational guidance, work motivation theory, and organizational analysis are discussed.

ACKNOWLEDGEMENTS

During the period of my research I have been attached to the University of Glasgow and the Polytechnic of Wales. I would like to acknowledge the help and enthusiasm of Mr Thomas E Carruthers who acted as my supervisor at the University of Glasgow during the difficult initial two years of formulating and developing my research programme. I would equally like to thank Dr Charles Jackson at the University of Wales Institute of Science and Technology who so readily agreed to act as my supervisor and director of studies following my degree transfer.

In addition, I would like to express my appreciation to Dr Peter J L Hawkins at the Polytechnic of Wales who acted as my second supervisor and who gave his time so freely to help overcome the practica and administrative difficulties that arose during the transfer of my registration from the University of Glasgow to the Polytechnic of Wales.

I am also indebted to the advice of Miss Joan Wright of the Department of Computing at the University of Wales Institute of Science and Technology who painlessly helped me through the initial stages of my data analysis.

Finally, I would like to thank my wife, Linda, for her interest in and support of my postgraduate work.

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PART ONE

INTRODUCTION AND REVIEW OF THE LITERATURE

1. Introduction

1.1 Background Ideas

Intuitively, there are strong links between occupations and personality, and it is a commonplace observation that different personality profiles characterize different jobs. Numerous studies in occupational guidance have related personality factors to work behaviour. For example, such diverse personality attributes as attitudes, satisfactions, needs, interests, human values and cognitive abilities have been related to man's adaptation to his working environment. It appears, however, that while abstractly acknowledging the "interaction of person and situation" most personality theorists assume internalized behavioural dispositions relatively independent of stimulus conditions. Consequently many psychologists have expressed dissatisfaction with the notion of personality traits because little empirical evidence of cross-situational consistencies of behaviour have been found. Bandura and Walters (1963) and Mischel (1968) have extensively examined the evidence for the assumption of generalized personality traits. As early as 1928, Hartshorne and May investigated 'moral character' or honesty in schoolchildren and found very little consistency. Some children who were honest in one situation were dishonest in others, and situational effects seemed to exert a greater influence than the children's 'sense of honesty'. A little later Dudycha (1936) demonstrated the specificity of punctuality in a student population. Since then Mischel (1968) has found considerable evidence for the specificity of behaviour including situational specificity for syndromes like attitudes towards authority, aggression and dependency.

It also seems empirically clear that the same situations can evoke very different behaviours in different people and that seemingly different situations can evoke similar behaviours in one person. Thus it is not situations as such that evoke behaviour but how a person construes them. Situations have a different 'meaning' for each person, and will exert a varying influence, depending on his previous learning experiences in those situations. People do not

indiscriminately and passively admit all outside influences, but select and evaluate them. This selection and evaluation has a marked effect on how a particular stimulus affects behaviour. However, situational variables are not in themselves sufficiently powerful to account for human behaviour. It is the relationship or interaction between person variables and situational variables that is important. Bowers (1973) has reviewed 11 studies that he was able to find which allow one to partition the controlling variables over behaviour into person, situation and interaction variables. The behaviour examined covered a wide range and included agression in young boys, anxiety in students, and resistance to temptation in children. He found that the interaction may account for twice as much variance as either persons or situations alone. Therefore, this evidence is not compatible with a completely situationist position nor a completely trait position. Any theory will have to take simultaneous account of both influences, if it is to provide useful predictions about individual behaviour.

Role theory propounds that each individual in a society occupies a number of different positions, and therefore, has a number of different roles. Multiple positions and multiple roles are typical of all people. For example, Super (1977) developed "The Life-Career Rainbow" model to represent the ten life roles which he identified as potentially being present for any given individual. Super named his 10 life roles child, student, worker, spouse, homemaker, parent, leisurite, citizen, consultant and patient. When the individual exercises one role, his other roles tend to become latent. For example, an occupation permits an expression of the individual's public personality which is a special instance of role-specific behaviour. The dramaturgical perspective advocated by Goffman (1959) would suggest that on the job an individual wears an occupational 'persona' - a mask which reveals some of him and hides some of him. Work need not be a complete expression of the person as he sees himself, but rather it is an expression of that part of himself he wants to reveal publicly on the job. In other words, he chooses his occupational persona with the view

from both sides of the mask in mind - how he thinks the world will look to him, and how he thinks he will look in the eyes of the world.

The importance of this work aspect of the public personality - the occupational persona - varies from being psychologically peripheral to being psychologically central. In general, for example, work is of more importance to men than women in our present culture. It is of more central importance to the middle classes than to the lower classes or upper classes, and it is more central to the individual in a work-orientated Protestant Ethic culture, like the UK and USA, than it is in a tradition-directed society in the non-Western, less developed countries. Also, for each individual, of course, the psychological centrality of work can be expected to vary from life stage to life stage.

The occupational persona appears to be determined by a number of personal, situational, economic, sociological, psychological, and philosophical variables. For example, one's job may be the consequence of chance meetings or chance exposure to influential books, friends, neighbours, or teachers; the socio-economic status of parents; the state's economic climate and availability of jobs; individual psychological needs; and one's perception of the meaning of work and life in general. Indeed, the selection of an occupational persona may express any of 4 relationships between the self, the self-concept, and the occupational persona - that is, the relationships between the real or actual self, the perceived or conceptualized self by the self, and the self expressed in the occupational situation. Firstly, the self may be congruent with the self-concept which is congruent with the occupational persona, and a 'self-actualized' state has probably been attained. Secondly, the self may not be completely congruent with the self-concept, although the self-concept may be congruent with the occupational persona. For example, in this case one may choose a job which requires the characteristics of the self-concept but which are not present in the real self. Thirdly, the self-concept may be congruent with the self but the individual does not wish to display

all his self in an occupation, and so the occupational persona is not congruent with the self-concept. The individual, for example, may only allow himself to play the role that the job expects. Fourthly, the self may be congruent with the self-concept, and this may be congruent with the occupational persona, but the occupational role expectations occasionally involve tasks which do not appear appropriate.

It is clear that there has been very little empirical interest among researchers in how popular constructions of the occupational persona vary, how such variations arise, and what occupational behavioural significance can be attached to them. There has been even less interest in the personal systems of evaluations that individuals place on work. For example, an individual's behaviour at work will vary in relation to the meaning work has for him. Is work seen merely as instrumental in providing resources to purchase goods and services, or as an end in itself, or as a means of improving status or gaining social acceptance, of obtaining influence over others, of indulging charitable feelings, or as a combination of these things? Questions such as these indicate the multiplicity of possible meanings attached to work and yet we know very little about how an individual's conceptions of work relate to how that individual behaves, and is likely to behave, in the work situation. In other words, whether an individual's occupational persona is related to his organisation of beliefs about work, and whether an individual's ideological orientation to work is related to his work behaviour.

The hypothesis that had now evolved was that these personal systems of evaluations that individuals place on work are related to an individual's occupational persona and occupational behaviour. The emphasis on the occupational persona was clearly going to lead the research into certain aspects of personality theory. It was also evident that this conceptual framework for understanding occupational behaviour had a potential contribution for understanding occupational choice and consequently place the roots of the research in occupational choice theory.

The interest in the personal systems of evaluation that individuals place on work, and the emphasis on this cognitive approach to understanding occupational behaviour was also establishing the roots of the research very firmly in social psychology and the study of belief systems. The term 'work-orientation' was introduced as a measure to reflect an individual's beliefs about work and thus the study also needed to explore the literature on orientations to work. Subsequently, as the research developed the emphasis on an individual's organisation of beliefs about work was seen to have a relevance for both work motivation theory and organizational psychology.

1.2 The main purpose of the study was now clearly established. The main objective of the study is to examine the empirical implications for the author's occupational belief systems model of occupational choice and occupational behaviour. This theoretical conception of an occupational system of beliefs is introduced as a model for the personal system of evaluations that individuals place on work. The method adopted to examine this model is to inductively explore the relationship between the occupational persona, occupational beliefs and occupational behaviour.

However, the first objective of the research was to develop an instrument for measuring the occupational persona and to examine both the usefulness of this instrument and the benefits of adopting an interactionist approach to the study of the occupational persona. The results will also be reviewed with the intention of exploring the personal and situational correlates of different occupational personas.

The study also aims to develop an instrument for measuring an individual's beliefs about work, and to examine its usefulness as a measure of work-orientation; as well as considering the benefits of adopting a cognitive approach to the study of occupational choice and occupational behaviour.

Finally, the study will attempt to demonstrate the relevance of

the work-orientation concept as a conceptual framework which aids our understanding of occupational choice behaviour and the occupational guidance process as well as in the study of work motivation and organizational analysis.

1.3 The thesis has been structured into four parts. The purpose of this part 1 is twofold. Firstly, the aim is to outline some of the background ideas that led to the development of this study, and to clarify the research objectives. The second purpose of part 1 is to review the literature in order to provide a rationale for examining the appropriateness of the present study. The review of the literature is divided into three sections. The first section overviews the historical development of utilising cognitive structures in the study of personality, and discusses the application of belief systems to occupational choice theory. The author then proposes his Occupational Belief System model as a theoretical explanation for occupational choice behaviour and, in the second section, the occupational choice theories which have already been presented in the literature are reviewed. This review is concluded with a presentation of the author's Occupational Belief Systems Theory of Occupational Choice and Occupational Behaviour. This theory propounds that occupational choice behaviour is a compromise between occupational beliefs, occupational persona constraints, and socio-economic constraints. In the third section, the term "work-orientation" is introduced to link the previous discussion on belief systems and occupational choice theory. It is argued that an individual's work orientation reflects his occupational system of beliefs, and an individual's particular work orientation determines his occupational choice. There is a review of the research relating to work orientations, and finally, there is an outline of the theoretical development of the author's Occupational Beliefs Index, which is proposed as an instrument for measuring an individual's work orientation.

Part 2 is devoted to a description of the development of the Occupational Persona Self-Construct Inventory. At the beginning of Part 2, there will be a consideration of the appropriateness of

self-report techniques, a brief review of the self theory underlying the occupational persona, and a summary review of research related to the development of instruments for measuring personality traits at work. The major part of this section is devoted to a detailed presentation of the construction of the OPSCI. An important feature of the construction is the development of a hierarchical factor analytic model, and the use of a Factored Homogeneous Item Dimension (FHID) as the basic unit of the factor analyses.

Part 3 is presented in two parts. The first part includes a discussion of the design of the study, and a description of the sample, the procedure, the research questionnaire, and methods of data collection. The second part of Part 3 is devoted to a presentation of the results of the study. The psychometric analyses of the OPSCI and OBI are presented, and a series of multivariate discriminant and regression analyses are used to explore the relationship between occupational beliefs, the occupational persona and occupational behaviour as measured by occupational choice, career patterns and reasons for leaving jobs.

The objective of Part 4 is to review the results of the study, and in particular, examine their implications for the author's occupational belief system model of occupational choice and occupational behaviour. There will be an examination of the usefulness of the OPSCI, and the benefits of adopting an interactionist approach to the study of the occupational persona. There will also be an attempt to relate the findings of the study to an explanation of how constructions of the occupational persona vary with an exploration of the personal and situational correlates of people with different occupational personas. The usefulness of the OBI as a measure of work orientation, and the benefits of adopting a cognitive approach to the study of occupational choice and occupational behaviour will be examined. There will then be a discussion of the contribution of the occupational belief systems model, and the work orientation concept, to the understandings of the occupational choice process, and to occupational guidance and life counselling systems; and an examination of the relevance of the work orientation

concept to the study of work motivation, and as a conceptual framework for understanding organisational structure and organisational behaviour. The final section of Part 4 will present the main conclusions of the study, including a discussion of the directions in which the research could be developed.

1.4 The major importance of this work in the view of the author is that it contributes very clearly to the development of a science of the psychology of occupational behaviour. By adopting a cognitive approach for studying occupational behaviour, the roots of the author's theoretical developments are placed very firmly in basic psychology.

It is also hoped that the author's proposed Occupational Belief Systems model will provide a conceptual framework which will equally aid our understanding of occupational behaviour, occupational choice behaviour, the process of career development, the meaning of work and work motivation. It is also expected that this model will contribute to the understanding of the developmental aspects of such concepts as vocational maturity, and will provide an explanatory framework for individuals who both value and do not value work, as well as for those individuals who have tempered their rational occupational choice by the social constraints on such rationality.

The author will also place much emphasis on the promotion of the work orientation concept as a valuable conceptual framework for understanding the occupational guidance process; and the Occupational Beliefs Index developed in this study is recommended as a counselling tool to help classify and expresss an individual's work orientation. It is anticipated that the work orientation concept will provide a convenient way for accounting for individual tolerance in occupations, and may help us to understand individual differences in information processing for decision making, and to identify the antecedants of good decision-making. The work orientation concept is also promoted as an alternative conceptual framework for understanding work motivation, and as a major causal

variable in the analysis of behaviour in organizations. Finally, it is argued that this emphasis on work orientation has enormous implications for an organization's view of how man is motivated to work, and for the organization's views about management and people in their organization.

2. Overview of the Different Approaches to Belief Systems

This section is divided into 2 parts. The first part will present an overview of the historical development of utilising cognitive structures in the study of personality. The second part will discuss the application of belief systems to occupational choice theory.

2.1 Cognitive Structures and Personality Theory

The importance of the "psychological environment" or the world of experience as opposed to the world of physical reality, is accepted by most personality theorists. Lewin, Rogers and Kelly are perhaps the most prominent theorists to develop this theme and, in general, there is a growing tendency for personality theorists to give explicit attention to the socio-cultural context within which behaviour occurs.

Lewin, Rogers and Kelly reflect the phenomenological approach to the study of personality which holds that the reality of an object, person, or situation, is purely a function of the way it is perceived by him. Consequently, behaviour is explained in terms of the subjective experiences and interpretations of the self as opposed to biological drives.

Lewin (1936) was one of the first to develop an explicit theory outlining the significance of the psychological environment, or the world of experience as opposed to the world of physical reality. Lewin's field theory attempted to define a set of concepts by which one can represent psychological reality. The theory postulated that behaviour is a function of the field in which the behaviour occurs, and that analysis of this behaviour must examine the whole situation from which components can be differentiated. Lewin introduces the concept of the "life space" to represent a

person's psychological reality. The life space includes the person and his psychological environment and contains everything we need to know to understand an individual's behaviour.

Rogers (1951) formulated an explicit self theory, although other theorists, including Allport, Adler, Cattell, Freud, Goldstein, Jung, Murphy, Murray and Sullivan, have also made important use of the self-concept. Rogers' theory regards the 'self' as the most important element of the individual. Rogers proposed a rational model of man who reacts according to his perception of the various phenomena around him rather than to reality as defined in objective terms. Thus, according to Rogers, the only way to understand a person is through his particular frame of reference. Rogers also asserts that a phenomenal self is differentiated out of the total phenomenal field, and becomes the self-as-object. Consequently, Rogers believes in self-reports as providing the most appropriate psychological data.

Kelly (1955), like Lewin and Rogers, emphasises contemporaneous conscious cognitive processes and de-emphasises hereditary, historical and biological factors. The basic assumption in Kelly's personal construct theory is that all events are subject to alternative constructions. In other words, there is no such thing as objective reality but only ways of interpreting events. Kelly argues that a person views and interprets his world through bipolar concepts called "constructs" (eg sociable - unsociable) which enable him to predict events. A construct is a particular kind of category unique to the person using it. Two people in the same situation will construe it differently; also, for any one person, constructs may change with the passage of time, depending on the person's mood, development and so on. In other words, because each individual has his own unique conceptual system, no 2 people can perceive or react to situations in exactly the same way. The personal construct theory of Kelly has a similar approach to Rogers in that the individual is considered to be the most knowledgeable person with regards to his own unique problems. In personal construct theory man is portrayed as a scientist who is constantly making sense out of his world.

Laing (1967) also takes a phenomenological position in his attempt to understand other people. Essentially, he is concerned with the individual's experiences in the context of his "being-in-the-world". Laing is extremely scathing in his attack on those who take an objective detached stance in order to comprehend how human beings function. He believes that depersonalisation and scientific detachment leads to alienation from the subject matter. Laing (1967) writes:

> "The other person's behaviour is an experience of mine. My behaviour is an experience of the other. The task of social phenomenology is to relate my experience of the other's behaviour to the other's experience of my behaviour ..... I cannot experience your experience. You cannot experience my experience. We are both invisible men. All men are invisible to one another".

The fallacy of stimulus-response theory appears to be that a man responds to a stimulus. In effect, he responds "to what he interprets the stimulus to be" and this in turn is a function of the kind of constructs he has detected in or imposed upon his situation. Two people in exactly the same situation will then behave in different ways because we differ in the way we perceive and interpret a situation, what we consider important about it, what we consider its implications and so on. Each of us lives in what is ultimately a unique world, because it is uniquely interpreted and thereby uniquely experienced.

Mischel's (1973) social behaviour theory is closely related to the phenomenological approach. This theory has evolved from a dissatisfaction with the behaviourist approach which emphasises external, observable variables, and a dissatisfaction with the trait theory approach which emphasises person variables to the exclusion of environmental variables. Social behaviour theory argues that behaviour depends on the exact stimulus conditions in the evoking situation and on the individual's history with similar stimuli. Although behaviour is complex and depends on a multiplexity of situation-specific variables, it is argued that

meaningful predictions can be achieved when a few key variables are properly arranged.

Mischel (1973) has argued that personality must be analysed in terms of 3 perspectives-situational determinants, person variables, and experimental phenomena (that is, the individual's subjective interpretation of events.) The social behaviour theory argues that each individual's personal philosophy is based upon his own value system and frame of reference. An individual's beliefs and attitudes are modified by value systems acquired from parents, peers, and school system. An individual's personal philosophy is also modified by a particular need at any specific time, by a frame of reference, by past experiences, by present situations and by future expectations. While it is undoubtedly true that behaviour is more situation-specific than trait theory acknowledged, it is also more person specific than is sometimes recognised. Situationism proposes that behaviour is primarily determined by external stimuli, but Bowers (1973) argues that a view stressing the interaction of the person and the situation is more conceptually satisfying, and indeed, empirically justified. The "interactionist" view argues that situations are as much a function of the person as the person's behaviour is a function of the situation.

Bowers (1973) claims to have empirically demonstrated that the interaction may account for twice as much variance as either persons or situations alone. Bowers (1973) and others have also pointed out that the proportion of variance due to person, situation or interaction variables will depend on the particular behaviour being considered. The evidence does suggest that a completely situationist position or completely trait position is untenable, and that any theory of individual behaviour will have to take simultaneous account of both influences.

Mischel's (1973) analysis of the person variables is closely related to the phenomenological approach of Rogers and Kelly. Mischel argues that traits do exist but that they are idiosyncratically organised in each person. Each individual has his own

structure of traits or constructs which might not be acknowledged to exist by another individual. However, Mischel (1971) also criticised the phenomenological approach when he wrote:

> "Perhaps the most fundamental criticism of cognitive and phenomenological explanations is that they are incomplete and do not provide a sufficiently detailed and comprehensive analysis of the cause controlling behaviour. In Kelly's theory, for example, personal constructs are viewed as key determinants of behaviour, but what determines the constructs that a person has? Offering the construct as a cause of the observed behaviour may be an example of an unfinished causal explanation. Such unfinished analyses are found whenever mental states, perceptions, cognitions, feelings, motives or similar constructs are offered as explanations of behaviour while the determinants of the mental states themselves are ignored." (p 104)

In the social behaviourist view, therefore, cognition is subject to and mediates the impact of environmental stimuli, but cognitive structures are not used as explanations of behaviour. However, the interactionist view also argues that the situationist view is incomplete in that neither cognitive variables nor environmental variables can be used in isolation to explain behaviour.

Very importantly, it has also been pointed out by Wachtel (1973) that some individuals seem to generate their own social environment by their own behaviour, and that consequently, there is a certain consistency in the environments people create for themselves. Wachtel (1973) writes:

> "We must ask why for some people the situation is so rarely different. How do we understand the man who is constantly in the presence of overbearing women, or constantly immersed in his work, or constantly with weaker men who are cowed by him and offer little honest feedback? Further, how do we understand the man who seems to bring out the bitchy side of whatever women he encounters, or ends up turning almost all social encounters into work sessions, or intimidates even men who are usually honest and direct."

There does appear to be some evidence (Raush 1965; Kelley and Stahelski 1970) to suggest that people generate consistent social environments, and generate consistent behaviour.

2.2 The author supports the belief that psychology must accept the common sense idea that what a person thinks and feels determines what he will do, and that the phenomenal self is both an object and a doer. It is a doer because it determines all behaviour; it is an object because it consists of self-experiences. It is argued that this world of changing experiences can only genuinely be known by the individual himself. The psychologist with his methods of identifying and measuring stimulus properties and his tests for assessing personality cannot know the person's phenomenal field as completely as the person is capable of knowing it. According to this proposition the person is the best source of information about himself.

A person does not react to external stimuli as such but he reacts to his experiences of the stimulating conditions. Whatever he thinks is true, whether it is actually true or not, is reality, and it is this subjective reality which determines how he behaves. Since his verbalizations are symbolizations of inner experience, the psychologist can learn what exists in the person's private world by listening to what he says. Therefore, self-report techniques, it is argued, provide the most satisfactory data, and trying to understand the person by means of observation is less satisfactory.

Self-reports will always be constrained by the limits of the individual's own awareness. However, in laboratory research into unconscious responding (eg Erikson 1960), just as in the context of personality testing (Mischel 1976), what the person tells us directly generally turns out to be as valuable an index as any other more indirect sign (eg galvanic skin response). Bem and Allen (1974) proposed that "consistency" may characterise some people in <u>some</u> areas of behaviour, and investigated consistency on the traits of friendliness and conscientiousness. Their

results demonstrated that individuals who identify themselves as consistent on a particular trait will be more consistent cross-situationally than those who identify themselves as highly variable. Farr's (1978) social and reflexive model of man also suggests that the assessed are nearly as well able to gauge their own performances as any 'objective' assessors. In experimental social psychology, Bem's (1972) theory of self-perception postulates that in making inferences about his own beliefs and attitudes, the individual makes use of the same cues that would be available to an 'external observer of his behaviour'.

Forehand and Gilmer (1964) point out that occupational psychology has not focused adequately on the interactions that exist in the environment. The organizational environment is not static as seems to be assumed by many who select, place and train individuals for organizations. No individual is able to actualize all his potential in one possible situation. He chooses and selects the potential he wishes to express and organizes it into a meaningful pattern so that its expression becomes possible. More knowledge is needed about what happens to individual differences under differing environmental settings.

New understandings about work behaviour must, therefore, concentrate on the interaction between the individual and the work environment. The approach of this study to work behaviour is based on the multiple determinism of behaviour and the important role of the work context, as well as viewing the "subject" as the potential expert of his own behaviour. Work behaviour differs from other kinds of behaviour in that the stimulus that evokes it is occupational, and how we perceive the stimulus is influenced by our beliefs about work. It is very probable that the kinds of view individuals hold about work depends on the accumulation of data from many work or occupational situations. To comprehend how individuals use these constructs we need to understand the cognitive structures, which the author terms "occupational belief systems".

2.3 Belief Systems and Occupational Choice Theory

Over the last 20 years it has become apparent that the analysis of cognitive structures, like belief systems, has considerable potential in explaining the occupational choice process. Occupational choice theory has developed largely independently of the theory of belief systems. Indeed, occupational psychology seems to have isolated itself from social psychology until 20 years ago when the work of Merwin and di Vesta (1959), Hilton (1962), Osipow and Scheid (1971) and Hudson (1968) began to integrate the sub-disciplines. Osipow (1970) proposed the use of the concept of cognitive style as a means to integrate personality data into career functioning. Research has already accumulated revealing the way cognitive functioning can influence development in general and educational and vocational development in particular. For example, Roe's (1957) work hypothesizes that early family environment affects later interpersonal orientation which in turn affects later vocational functioning. In other words, a set of cognitive styles emerge from various kinds of early childhoold experiences. Dauw (1966) also found significant differences in the kinds of occupational preferences expressed by high versus low creative thinking boys and girls. Gough and Woodworth (1960) examined systematic differences and style among professional research scientists and found that the scientist performed very different work functions under the same vocational label. Eight factor types appeared to represent distinctive syndromes of several cognitive styles of significance in the work environment. The data suggests the possibility that people entering an occupation who exhibit a very distinctive cognitive style from the model style for that field will organise their work tasks and occupational objectives in a very distinctive fashion from one another.

The evidence does appear to suggest that specific cognitive styles may have an impact on occupational preference and occupational performance. Also, people with different cognitive styles are likely to process information differently. Cognitive styles may further influence the degree to which individuals are willing to make decisions on limited data versus the degree to which they are

able to make decisions at all in the presence of a degree of uncertainty. Finally, the individual's perceptual organisation will probably affect the way he chooses to organise daily tasks, the emphasis he gives to certain tasks as opposed to others and the differential job satisfaction that he derives from his occupational activities.

The occupational choice process, therefore, quite clearly involves the application of beliefs about our world, the occupational decision -making activity is quite clearly an activity with distinct social implications, and many decisions are made on the basis of limited information. Indeed, occupational decision-making de-emphasises the importance of correct information, because incorrect information and stereotypes can be equally important in the cognitive elaboration of an occupational belief.

People choose occupations by using cognitive processes that we do not yet understand. The belief concept clarifies some problems in the field of occupational choice, and it is argued here that the occupational choice process should be seen as involving belief mechanisms. However, there is a problem on how best to conceive the relationships between beliefs and overt occupational behaviour.

The form which belief-behaviour relationships are expected to take will depend upon one's basic theoretical position on the nature of beliefs. For example, a belief may be thought of as a motivational concept which has a direct link to behaviour. For example, La Piere (1934) refers to this idea when he calls attention to the discrepancies which often exist between attitudes assessed by questionnaire, or in interview situations, and some criterion behaviour. De Fleur and Westie (1958) and later Alexander (1967) have divided the various theoretical conceptions of attitude into "latent process" and "probability" models. In the former type, relatively complex internal structures are hypothesised as "hidden mechanisms" which may or may not (depending on a theoretical system) be seen as related to behaviour. On the other hand, the so called "response probability" models involve the assumption

that only very simple theoretical structures are necessary for defining the notion of attitude. By defining attitude as the probability of particular types of responses, the need to worry about the nature of "underlying mechanisms" operative within the individual is absent. This approach, however, lacks interest in explaining how factors within the individual, such as motivation, perception and memory, are related to overt behaviour.

It seems obvious that the cognitive processes involved in occupational behaviour can only be understood in relation to the notion that individuals have beliefs about work. The cognitive processes involved in such beliefs are likely to be similar to those involved in construing other complex social phenomena. The process of combining different kinds of evidence to form a belief is studied as the process of "impression formation" in social psychology (Rosenberg 1968; Asch 1946; Anderson 1962), though if viewed over the formative years of life, it might well be likened to the study of "attitude development" as part of the life-cycle. Thus, this study of beliefs about work might be more accurately described as a study of how individuals form concepts about the occupational world, how they interrelate these concepts, and how they manipulate and evaluate them making occupationally relevant decisions.

Semantic information about work is probably not organised in individual memories in the same way as managers, officials and some social scientists organise it. Towler (1970) stated that "the basic problem stems from the category "occupation" which all too often is assumed to be uncomplicated. ..... to suppose that all occupations are sufficiently homogeneous to make a complete list of occupational categories sociologically meaningful completely leaves out of account the question of how the various actors view their work and what kinds of meaning it has for them." (p 42-43).

Much research on the "perception" of occupations has been concerned to identify the qualities that people attribute to them. It has been suggested that people do not scan the world of occupations as

economic men, concerned only with salary levels and pension schemes. Borow (1965) says "It is very questionable whether objective and factual information per se is as potent a determinant of occupational preference and desperation as the broadly framed images of jobs as social ways of life." Hayes (1969) comments that such social stereotypes often present the picture of an occupation which is unlike the real situation. Beardslee and O'Dowd (1962) provide evidence for the idea that students think about occupations in terms of their lifestyle implication. According to Beardslee and O'Dowd individuals comment spontaneously on how different kinds of professionals and their families live, on the community status, possessions and activities that follow from occupational roles, and on a personality and quality of family relationsips that jobs imply. Interestingly, very few individuals were able to give an account of the specific day to day occupational activities. Occupational "images" seem to be made up of economic attributes (pay, security, status, etc) and also psychological attributes which tend to be less rational and perhaps less socially acceptable as reasons. However, it is difficult to tell which kind is more basic or more resistant to change.

2.4 In our pursuit of understanding the way people behave, some social psychologists have argued that to accommodate and adapt to one's environment, each person must evolve some form of mental apparatus which will mediate his continuing interchange with the environment. By means of this apparatus the individual must develop a reasonably stable representation of his social and physical environment so that he can meaningfully differentiate and discriminate between certain aspects of this environment. These 'mediating variables' have been described by social psychologists as cognitive structures (Bieri, Atkins, Scott, Leaman, Miller and Trifodi 1966; McGuire 1968; Rosenberg 1956; Scott 1962b; Zajonc 1954, 1960), and as a construct system (Kelly 1955), conceptual system (Harvey, Hunt and Schroder 1961), cognitive styles (Broverman 1960; Wallach 1962; Murray and Jackson 1964; Witkin 1962) and as belief systems (Harvey 1969; Rokeach 1960).

Within the last 2 decades, the individual's perceptual-conceptual organisation has become of interest to the psychologist studying the occupational choice process. However, there has been some lack of agreement over the definition of this perceptual-conceptual organisation. Broverman (1960) interprets cognitive styles as the relationship between abilities within individuals. Murray and Jackson (1964) describe cognitive styles as "perceptual attitudes" which in turn generate stable responses to various stimuli. Wallach (1962) interprets cognitive styles to explain the cognitively based generality of responses across situations. Similarly, Witkin (1965) has defined cognitive styles as "characteristic, self-consistent ways of functioning in their perceptual and intellectual activities".

For Rokeach (1960) and Harvey (1961) a belief system represents " ..... each man's total framework for understanding the universe as best he can." (Rokeach 1960 p 35). It is a cognitive system which mediates in the individual's confrontation with his world. The belief system is the means by which events are interpreted and responses manufactured. Scott (1962b, p 89) describes a cognitive structure as "a set of elements and the relations between them". The elements refer to the content of the cognition and the properties refer to how these elements are organised or how these elements relate. Scott (1962b, 1963b) and Zajonc (1968b) have reviewed many of the attempts to specify the properties of cognitive structures. The elements are usually referred to as "cognitions" described by Festinger (1957 p3) as "any knowledge, opinion or belief about the environment, about oneself, or about one's behaviour." Rosenberg and Abelson (1960 p117) defined these elements as "cognitive representations of things, concrete or abstract". Zajonc (1954, 1960) termed the elements as attributes, and Kelly (1955) introduced the idea of a construct as the basic unit of the cognitive structure. That is, each person views and interprets his world through bipolar concepts called "constructs" (eg sociable-unsociable) which enable him to predict events. A construct is a particular kind of category which is unique to the person using it. Other theorists like Osgood, Suci and Tannenbaum

(1957) and Bieri et al (1966) have emphasised the actual dimensions in making judgements. Kelly's and Osgood's approaches are very similar in that both require the subject to allocate scale-positions to concepts, or 'objects' (in the widest sense). However, Kelly's "Role Construct Repertory Test" differs from Osgood's sematic differential in that this technique allows the subject to define his own scales, and that the ratings are applied to persons. For these and other reasons Kelly's approach is sometimes said to be more psychological than Osgood's.

Harvey et al (1961) proposed a concept as the basic element in the cognitive structure. These concepts function to organise our psychological environment. They may be concrete and dependent on the physical aspects of the stimulus objects they classify or they may be abstract in which case the concept will have evolved from subjective factors in the individual. Bruner (1957) proposed categories as the basic elements in cognitive structures. A category refers to a class of objects, events, ideas etc, and is a basic rule identifying the members of that class. Finally, Rokeach (1960) proposed a belief as the basic element in this perceptual-conceptual organisation. A belief is conceived to represent all the beliefs, expectancies or hypotheses, conscious or unconscious, that a person at a given time accepts as true of the world in which he lives.

Despite differences in terminology or shifts in emphasis all elements in the cognitive structure differ from each other according to their degree of centrality or peripherality. The more central the element the more ego-involving and the more relations the element will have with other elements. The elements will also differ according to their valence and resistance to change. The more central elements will tend to be more resistant to change. Cognitive structures, therefore, will consist of organised hierarchies of interdependent elements, and depending on the importance of the element an element modification could affect the total structure.

These structures appear to be serving 4 main functions. Firstly, they filter information by attuning to specific aspects of the environment. Secondly, they evaluate and interpret information. Thirdly, it is argued that they co-ordinate and moderate motives and emotions in the behaviour of the individual (Bieri 1971; Hunt 1963; Rokeach 1960). Finally, cognitive structures will determine the response capacities of the person and how he might accommodate or adapt to situational constraints.

The particular life experiences of an individual will determine the nature of the cognitive structures he develops, and these may prove efficient or inefficient at coping with life problems. It has been argued that the properties of adaptive and maladaptive structures differ significantly in a number of ways, and a number of different dimensions have been proposed to characterise differences in the properties of people's cognitive structures.

2.5 The Development of Cognitive Structure Models

Lewin's (1936, 1951) earlier work heavily influenced the ideas of Rokeach (1960) and Harvey et al (1961). Zajonc (1954, 1960) went further by attempting to systematically operationalise some of Lewin's ideas in order to assess the properties of cognitive structures which people develop to interpret their environment. Lewin's concepts are formally stated in terms of a topological model because Lewin preferred to define his structural concepts spatially because of the inaccuracies of verbal definition. Zajonc's approach is closely related to Lewin but his theory utilises logical or classificatory concepts.

Zajonc's model assumes that people perceive objects and events in terms of psychological dimensions and that the act of 'perceiving' some object involves projecting that object onto a set of dimensions, and attributing to it one value from each of these dimensions. A psychological dimension is a person's capacity to consistently match a set of responses with a collection of ordered stimuli, and the values derived from these dimensions are what are commonly understood by the characteristics of the concept or

object. Four of the major properties in Zajonc's model will be discussed below.

(1) Degree of Differentiation

This refers to the number of elements in the cognitive structure and the more elements there are, the more discriminating the individual in his perception of a situation, person or event.

(2) Degree of Complexity

Zajonc assumed that high complexity reflected a more sophisticated cognitive structure, and the complexity referred to the number of groupings between elements. Elements sharing similar characteristics may be sub-divided into groups, sub-groups and so on.

Zajonc's degree of complexity is similar to the notions of complexity used by Bieri (1955), Kelly (1955), Osgood et al (1957) and Scott (1962b, 1963a). Bodden (1970) and Bodden and Klein (1972) have suggested that cognitive complexity is an important mediating variable in the occupational choice process. Cognitive complexity implies that individuals have a wide range of independent cognitive constructs and are therefore able to make finer discriminations between occupations. Also, they are better able to identify a work environment suited to their coping style.

(3) Degree of Unity

This concept refers to the extent to which the elements are interdependent. A sophisticated integration of the cognitive structure will permit a multi-dimensional interpretation of events.

(4) Degree of Organisation

This concept is similar to the centrality-peripherality dimension of belief systems of Rokeach (1960) and Harvey (1966). It refers to the importance of particular elements and the clustering of elements.

The cognitive structure can be described or interpreted in 2

different ways. Rokeach (1960) and Harvey et al (1961) described the structure as a more or less permanent organisation of elements which characterise an individual. Schroder et al (1967) however, described the structure as a processing variable responsible for receiving, evaluating, storing and transmitting information. These structures are viewed as functioning in mediating behaviour, and to possess dynamic characteristics.

Systems analysis (Allport 1960; Gochman 1962; Miller 1955) attempts to reconcile the 2 theoretical positions. Gochman (1968, p 486, 487) describes it as " ..... an attempt to relate behaviour to the organisational aspects of its underlying structure ..... the very essence of systems analysis is its appreciation of the close relationship between structure and function". Such an interpretation permits cognitive structural properties to be described in terms of a spatial dimension, and dynamic properties in terms of a temporal dimension.

2.6 Individual Difference Approaches to Cognitive Structures

Theorists have tended to look for cognitive structural dimensions along which they can locate individuals according to their characteristic mode of functioning. Zajonc (1968b), Bieri (1971), Schroder (1971), Strenfert and Fromkin (1972), Abelson et al (1968), Schroder and Suedfeld (1971) and Warr (1970) have all made contributions to the review of the literature in this field.

The "cognitive complexity" approach is the theoretical heading which best describes the approach to classify the cognitive systems of individuals. The basic assumption made by these theorists is that the sophistication or complexity of a person's responses is characteristic of the conceptual dimensionality that a person uses to process information. A person who has developed a cognitive system which is highly dimensionalised and able to make finediscrimination is considered to be cognitively complex. Conversely a person is described as cognitively simple if his system is less dimensionalised and he is unable to make fine discriminations. For some other theorists, cognitive complexity refers to an enduring personal characteristic of an individual

mediating a wide range of behaviour (eg Harvey et al 1961; Schroder et al 1967; Witkin, Dyk, Paterson, Gooderough and Karp 1962) whilst for others it is a dimension of very limited generality (eg Crockett 1965; Scott 1962).

Many complexity theorists have used similar and sometimes identical terms but research methods and psychometric instruments developed have varied quite considerably. Comparisons between cognitive complexity theories therefore, tends to be difficult. However, theorists have tended to adopt either of 2 extreme positions to their interpretation of structural complexity.

One approach is concerned with psychological differentiation and measures complexity in terms of the dimensionality into which people sort stimulus information (eg Bieri et al 1966; Crockett 1965; Leventhal and Singer 1964; Scott 1962a; Shranger 1967; Signell 1966; Witkin et al 1962). The second approach on the other hand emphasises integration which refers to the ability to construe situations in a multi-conceptual manner and co-ordinate diverse elements (eg Harvey et al 1961; Harvey 1966; Karlins 1967; Schroder et al 1967; Suedfield and Hagan 1966; Tuckman 19 66; Crane and Schroder 1967). A person's cognitive system may become increasingly differentiated with experience but until these differentiations are integrated true complexity has not been attained. Piagetian theory adopts a similar position in that (in Piaget's terminology) the development of new schemas by the process of accommodation must be consolidated by the process of assimilation. Zajonc's measures of differentiation and unity correspond closely to these 2 approaches.

However, the attempts by various theorists to measure these concepts have again differed considerably. Bieri's measure of psychological differentiation only had a 0.06 correlation with Scott's measure in Vannoy's study (1965), and Miller (1969) and Little (1969) found equally low correlations between Bieri's and Crockett's measures. The measures of integration tend to correlate more highly because most approaches have developed from the

theoretical framework of Harvey, Hunt and Schroder (1961).

The integrative approaches have also been classified as systematic approaches. Rokeach's work into the open-closed dimension of belief systems comes into this category. Such systems are a means of understanding the personality of an individual and his psychological development. Harvey researched into a "concreteness-abstractness" dimension. Schroder researched into "integrative complexity" and Rokeach attempted to assess the "openness-closedness" of a person's belief system. All 3 researchers have developed tests to measure these dimensions.

Harvey's and Rokeach's research show similarities. Both researchers have been influenced by the work of Lewin (1935, 1951) and the research into "The Authoritarian Personality" by Adorno et al (1950). The phenomenon Rokeach refers to as a "belief" is similar to what Harvey calls a "concept" but there are substantial theoretical differences between these approaches.

Rokeach assesses the openness-closedness of a person's belief system using a summated scale, the Dogmatism-Scale or D-Scale (Rokeach 1960). Rokeach determines criteria to classify persons as closed or open-minded but Alter and White (1966) argue the weaknesses of his approach because they find the norms for the D-Scale vary subculturally. Therefore, the definition of the open or closed-mind becomes contingent on the distribution of scores in the sample being investigated, which is a rather arbitrary procedure. Researchers usually avoid Rokeach's problem by using an extreme-groups approach by selecting the top 10-15% and bottom 10-15% of the distribution of scores from the sample.

Harvey uses a semi-projective sentence completion test called the "This-I-Believe" test (TIB) to measure the concreteness-abstractness of "a person's belief system". Harvey identifies persons at 4 points along this dimension (not just extreme) and persons are distinguished by level of cognitive functioning, content of central beliefs and according to their developmental training.

2.7 The Structure of Harvey's Belief System

Harvey defines the concreteness-abstractness as "a quality of how the individual articulates and organises or differentiates and integrate his concepts of ego-involving domains ..... as we use the construct (it) refers to a superordinate conceptual dimension which encompasses a number of more molecular organisational attributes, such as degree of differentiation, extent of integration and centrality of the conceptual elements. Thus variation in concreteness-abstractness rests upon difference in patterning and organisation and not on differences in the algebraic sum of the superordinate characteristics (Harvey 1969 p 4).

Harvey (1966 p 42-43; Harvey et al 1961 p 72-76) identified 3 other basic structural properties which, he argued, can be used to describe any belief system.

(1) Clarity-ambiguity: This refers to how well a belief of the system has been differentiated. It is a property similar to Zajonc's 'degree of differentiation' of a cognitive structure. Obviously, a person with poor intra-concept differentiation will respond to many different situations in a similar way.

(2) Compartmentalisation-interrelatedness: This refers to the extent to which concepts are connected to each other following their differentiation. It is a property similar to Zajonc's 'unity' of a cognitive structure. Differentiation must be accompanied by the integration of beliefs if abstractness is to emerge.

(3) Centrality-peripherality: This refers to the dependence of other beliefs of a system upon a given belief. A highly centralised system is one dominated by a single belief. This property is similar to Zajonc's 'degree of organisation' of a cognitive structure.

Harvey argued that the more abstract people show less centralisation and a higher degree of differentiation and integration. The more abstract person also has a greater tolerance of ambiguity

and incongruent stimuli. Harvey classified persons on a concreteness-abstractness dimension and he considered this was determined by developmental experiences and his exposure to intra-system conflict. In other words, incongruent stimuli will generate finer discriminations and more complex reorganisation. An abstract person will develop when encouraged to confront divergent stimuli and to make a wide range of response.

Harvey et al (1961) identify 4 basic levels of concreteness-abstractness, each assumed to represent a point along this dimension ie most conrete, less conrete, more abstract, most abstract. The most conrete mode of functioning has been found to relate to dogmatism, closedness, high conventionality and high dependence on authority. The most abstract mode of functioning is assumed to manifest more information seeking exploratory behaviour, problem solving for intrinsic rewards and openness. Although Harvey (1967 p 207) argued that the content and structure of belief systems are theoretically independent, individuals at each point are more centrally involved in one kind of conceptual content.

Harvey has documented the results of studies to establish the construct validity of the 4 systems. Harvey has published his findings elsewhere (1966, 1967, 1969). The findings indicate that the structures of concrete persons are poorly differentiated and integrated in comparison with those developed by abstract people (Harvey, Reich and Wyer 1968; Lemon 1971; White, Atter and Rardin 1965; White and Harvey 1965). Concrete people also tend to evaluate situations in a more extreme, polarised manner than abstract people. (Adams, Harvey and Heslin 1966; Ware and Harvey 1967; White and Harvey 1965). Concrete people are also less able to tolerate ambiguity (Harvey 1965) and tend to be more impulsive in forming judgements. (Harvey 1966; Reich 1966; Ware and Harvey 1967). Harvey's research indicates that the simpler cognitive structures and low tolerance of ambiguity of concrete subjects makes them less flexible and adaptable persons. However, the existence of these cognitive and behavioural differences does not explain how these differences develop.

2.8 The Structure of Rokeach's Belief System

Rokeach considered that the "openness-closedness" dimension could be used to measure every individual's belief system. A closed belief system was conceived of as a system which could not tolerate opposing beliefs, and an open belief system was a system which could accommodate opposing beliefs.

More specifically Rokeach uses the term "belief-disbelief" system to describe an individual's organisation of beliefs. The belief system is conceived to represent all the beliefs, sets, expectancies or hypotheses, conscious or unconscious, that a person at a given time accepts as true of the world in which he lives. The disbelief system is composed of a series of subsystems rather than merely a single one, and contains all the disbeliefs,sets, expectancies, conscious and unconscious, that to one degree or another a person at a given time rejects as false. The belief-disbelief dimension is assumed to have several additional properties.

(1) Isolation: This refers to the degree of compartmentalisation or in the degree of isolation each belief has from another.

(2) Differentiation: This refers to the differentiation or the degree of articulation of detail in the belief system. Rokeach argues that the belief system is more differentiated than the disbelief system, but this hypothesis has not been verified.

(3) Comprehensiveness or Narrowness: This refers to the range or total number of disbelief subsystems represented within a given belief-disbelief system.

Rokeach conceives of his system as an organisation of parts that may or may not be logically interrelated. He organises the system into 3 layers - the central region, the intermediate region and the peripheral region. The central region contains beliefs about the nature of our self-concept and about the nature of our social and physical world. Rokeach refers to these beliefs as "primitive beliefs". The intermediate region contains beliefs about the nature of authority or any source to who we look for information

about the universe or to check information we already possess. We tend to rely on some authoritative sources for information and we also realise that others rely on different authoritative sources. The peripheral region contains beliefs representing the numerous derivations from authoritative sources. For example, beliefs about abortion and birth control may be derived from one's beliefs about the Catholic Church.

Rokeach proposed a third dimension of belief-disbelief systems which he refers to as a time-perspective dimension (Frank 1939; Lewin 1942). This dimension refers to the person's beliefs about the past, present and future and the manner in which they are related to each other. A narrow time-perspective is one in which the person fixates or overemphasises on the past, or the present or the future without appreciating the continuity and connections that exist among them.

Rokeach considered that to study the organisation of belief systems, it is necessary to examine the structure and the content of beliefs to give a complete understanding of the system. The specific content of all our beliefs and disbeliefs will vary from one person to another, and it is precisely this specific content which we examine when we wish to ascertain another's ideological position.

2.9 Determinants of Behavioural Differences

Harvey's attempts to explain the behavioural differences emphasises 2 important dispositional factors which he claims are responsible for the variability in behaviour; (a) the organisation characteristics of the belief system (structure and process), and (b) the effect of arousal upon cognitive functioning. Furthermore, the exact nature of these factors is determined by the individual's developmental experience. For example, if the structural characteristics of the belief are poorly differentiated and integrated, the person will categorise stimuli in a very gross manner, and therefore, it is possible to appreciate the limitations they may impose on the way a person perceives, interprets, evaluates and

reacts to events. Situations tend to be assessed in terms of whether the stimulus input to the system confirms or refutes the system or concepts in the system. Rejection tends to occur when the belief system does not have the structural capacity to handle the contradictory information and because contradictory inputs threaten the validity of beliefs composing the system and thus ultimately the individual's self-concept.

The manner in which a person characteristically responds to events and situations reflects the way his belief system functions. The behaviour being an interaction between the organisational properties of the belief system and his state of effective arousal which will of course vary from person to person. However, environmental influences are also responsible for variability in behaviour. All persons are differentially aware of situational factors (Harvey 1969) and to social cues relating to role, status and formal authority (Harvey 1966, 1967).

2.10 Belief Formation

Studies of belief formation have developed in 2 main directions. Two basic models have been proposed to account for these 2 directions. Firstly, a simple averages model assumes that the evaluation of a final impression is a function of the average evaluations of the components traits. A more sophisticated version of this model is a weighted averages model in which different component traits are not given equal weights (Anderson 1962, 1965, 1968, 1971).

The alternative model is a summation model which predicts that the final evaluation of an impression can be found simply by summing the evaluations of the component elements (Fishbein and Hunter 1964; Triandis and Fishbein 1963; Gulliksen 1956; Hammond 1955). Manis, Gleason and Dowes (1966) have developed more complicated models and Anderson (1965) and Warr and Smith (1970) have attempted to compare the different approaches.

It is difficult to summarise findings from studies using these

approaches because different studies have tended to use different stimulus materials and experimental manipulations and varied dependent measures. However, it does seem clear that particular stimulus variables (eg valence of information) and situational factors play a critical role in determining the nature of a belief, so that understanding the formation of a belief necessitates understanding the interaction between variables.

A psychological process which appears to underlie and account for some of these interactions is that an individual is cost-orientated in his evaluative judgement. That is, a person will often give greater weight to negative information which conveys potential 'costs' to him than to more positive information. There may also be indications that people may adopt characteristically different strategies in forming beliefs and reacting to different stimulus situations. The work of Fishbein, and its relevance to occupational choice theory, is discussed in more detail in a later section.

2.11 Occupational Belief System Model

Many attempts have been made to explain diverse and varied behavioural phenomena in terms of a range of structural and processing characteristics of belief systems. Rokeach's (1960) research has involved such areas as authoritarianism, conformity, ethnocentrism and prejudice, and resistance to acculturation. Harvey, Hunt and Schroder (1961) have attempted to embrace within their framework such areas as attitude change, child development, motivation, personality and measurement and psychopathology. Therefore, belief systems theory may seem a reasonable framework within which to investigate individuals differences in the way people behave at work, and in the way they are orientated to their work.

The belief system approach appears to have, at least, 2 main advantages. Firstly, the theoretical structure of the belief system is reciprocally related to the experiences and behaviour of the individual. Secondly, the dimensions of an individual's

belief system can be identified independently of the distribution of people in the sample under investigation. There are, however, some problems which remain with the belief systems approach. Neither Harvey nor Rokeach have clarified the relationships between the structural and content characteristics of belief systems. Harvey (1967 p 207) believes that structure and content may theoretically be considered to be independent. Secondly, there is the problem of how valid is the belief system approach in different sub-cultures and particularly in a cross-cultural context. Overall, therefore, the belief systems approach cannot be accepted uncritically but a substantial body of research from particularly the work of Harvey and Rokeach lend considerable support to the belief system approach.

The components of our individual belief system dictates the way we perceive the different aspects of our social world. We all bring to situations an enduring system of beliefs, values and intentions which help us to construe these situations in a meaningful manner. However, there has been very little empirical interest in the personal systems of evaluations that individuals place on work. For example, an individual's behaviour at work will vary in relation to the meaning work has for him. Work may be seen as merely instrumental in providing resources to purchase goods and services or as an end in itself, or as a means of improving status or gaining social acceptance or obtaining influence over others or as a combination of these things. There are a multiplicity of possible meanings attached to work and yet we know very little about how an individual's conceptions of work relate to how that individual behaves and is likely to behave in the work situation.

Theoretically, therefore, this research perceives the work personality or occupational persona as an organisation of beliefs about work, and that an individual's ideological orientation to work is related to his work behaviour. However, any conception of the nature of beliefs should satisfy certain criteria if it is to be scientifically fruitful. It should be intuitively plausible,

and it should be clearly distinguished from other concepts with which it might be confused - such as value and attitude. It should also avoid circular terms that are themselves undefined.

From the vast amount of literature on the subject there appears to be as yet little consensus about exactly what we mean when we speak of a belief, a value and an attitude, and exactly what the differences are between these concepts. They seem to be employed arbitrarily and interchangeably.

Beliefs are, of course, not tangible. We cannot see or study such cognitive processes directly because the concept of belief is an abstraction. However, we do use it to denote certain consistencies in a person's behaviour and his statements. In other words, a belief is an hypothetical construct or an inferred entity giving rise to measurable phenomena. A hypothetical construct can have no one or absolute meaning, and the definitions given will depend on what observations are selected as a basis for inference. However, although the distinction between concepts like belief, value and attitude are to some extent arbitrary, it is necessary to clarify what is meant when the word is used.

The concept 'belief' is viewed here as a cognitive process involving ideas about a stimulus object. The term belief denotes an assertion about some aspect of the world or the relation between 2 such aspects. In other words, what an individual considers to be true or likely about himself and the world. Belief statements refer to what is possible, what exists, what happened in the past, what a person is and what he can do. They are framed in terms of expectancies, hypotheses, subjective probabilities and so on.

The concept 'value' is also used variably but usually used to denote what is <u>believed</u> to be good or desirable. In other words, a value is a <u>type</u> of belief centrally located within one's total belief system, about how one ought or ought not to behave, or about some state of existence worth or not worth attaining. Values are abstract ideals, not tied to specific attitude objects,

representing a person's belief about ideal modes of conduct and ideal terminal goals. A person's values, like all beliefs, may be consciously conceived or unconsciously held, and must be inferred from what a person says or does. Value tends to be a higher order concept in that it may subsume a whole range of related beliefs. For example, a person who values work will believe in measures promoting job satisfaction.

Rokeach (1968) defined value as "an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence". Rokeach distinguished between 3 kinds of belief - descriptive or existential beliefs, those capable of being true or false; evaluative beliefs, in which the object of the belief is judged to be good or bad; prescriptive beliefs, in which some end of action is judged to be desirable or undesirable. A value, Rokeach stated, is a prescriptive belief.

The concept 'attitude' is viewed as an organisation of beliefs. As Krech and Crutchfield (1948) argue, all attitudes incorporate beliefs, but not all beliefs are necessarily a part of attitudes. The interrelated beliefs comprising the attitude are organised around a common object, with certain aspects of the object being at the focus of attention for some persons, and other aspects for other persons. The attitude has cognitive and affective properties by virtue of the fact that the several beliefs comprising it have cognitive and affective properties that interact and reinforce one another. Newcomb, Turner and Converse (1965) articulate it thus - "The attitude concept seems to reflect quite faithfully the primary form in which past experience is summed, stored and organised in the individual as he approached any new situation".

Every person will have numerous beliefs about work, some verbalised and some which he can't verbalise. In our everday life we continuously infer beliefs, consciously and unconsciously, from other people's behaviour, and obviously the more information we have about what a person says and does the more reliably we can infer beliefs from his behaviour. In this sense, the total 'belief

system' would be an organisation of verbal and non-verbal, implicit and explicit beliefs. The concept 'system' is conceived of as a psychological system in which the parts are not necessarily logically interrelated. When we speak of a person's system of beliefs, we include all of a person's beliefs, as inferred from all that he says and does, regardless of whether they are so perceived by the person himself. When we speak of a person's 'occupational system of beliefs', we include all of a person's beliefs about work, as inferred from all that he says and does at work. It is also important to appreciate that when we refer to a person's 'occupational system of beliefs', it does not mean that the mind can be subdivided into compartments, and that an individual belief about work could be traced back to an 'occupational belief compartment'. A person's beliefs about work are merely an interrelated part of the person's total framework for understanding his universe as best he can, by including every belief and disbelief of every sort the person may have built up about his world.

Occupational beliefs are depicted here as being systematically organised in a pyramidal fashion with the individual's most important constructs at the top. This cognitive structure is continually undergoing change as the individual interacts with the ever-changing objects in his environment. The precise beliefs at any given point in time is considered to be a function of the outcome of the individual's various predictions about his world.

Each belief an invidividual has leads to 3 possible outcomes - the work situation may validate the beliefs, invalidate the beliefs, or the evidence may neither confirm, nor disconfirm the predictions, in accordance with reinforcement theory, beliefs which are consistently validated tend to be maintained, and less frequently if they are invalidated. The number of beliefs a person has varies with the range he needs to make sense out of the work he is likely to encounter.

The concepts to be employed in describing the structure of the person's occupational system of beliefs are based on the work of

Kurt Lewin, and later, Milton Rokeach. Firstly, it would appear that our term 'occupational system of beliefs', should be more accurately described as an 'occupational system of beliefs-disbeliefs'; where the belief system is conceived to represent all the beliefs, conscious and unconscious, that a person accepts as true of his own occupational world, and where the disbelief system is conceived to represent all the disbeliefs, conscious and unconscious that to some degree, a person rejects as false about his occupational world. The disbelief system is not merely a mirror image of the belief system because, for example, when an individual changes a job he might be telling us what he dislikes in the present, rather than what he likes in the future. This belief-disbelief dimension can also be assumed to have additional properties; for example, it is empirically clear that beliefs vary in intensity, in their convergency and divergency, and in their relationships to other beliefs, and not everybody will have these properties to the same extent.

The second theoretical structure of the occupational system of beliefs is the central-peripheral dimension. It is apparent that Man's perception of work is influenced by his ideas, expectations, and aspirations, and these attitudes are often instilled very early in life. For some people, working may be a very central and ego-involving personality statement, while for others it may be quite peripheral and have little significance for their identity as persons.

The third, and final, theoretical structure is conceived as a time-perspective dimension, and which refers to the extent to which a person fixates on the past or present or future without appreciating the continuity that exists among them. It is suggested that how we react to our past or anticipate our future, and the emphasis we place on them, will affect our present behaviour.

The structure, therefore, of our occupational system of beliefs consists of a belief-disbelief dimension; a central-peripheral

dimension; and a time-perspective dimension. The main study will concentrate on the functions or psychodynamics of this system, the evaluation of the theory, and the exploration of its applications in the work situations.

It has already been made clear that the Occupational Belief System model is being proposed as a theoretical explanation for occupational behaviour, including occupational choice behaviour. The purpose of the following section is to review the major occupational choice "theories" which have already been proposed. The term "theories" is placed in inverted commas because many of these explanations lack the formal properties of a theory, and several advance propositions which would be difficult to disconfirm.

3. Overview of the Main Theoretical Approaches to Occupational Choice

3.1 Definitions

The term "occupational choice" is commonly used as the term describing the field of enquiry about why people do particular jobs. The term is not intended to only imply that people may consciously choose jobs on the basis of personal preference, but it also recognises that "external" social influences and institutions play a fundamental role in occupational allocation. Crites (1969) emphasises the loose nature of the term "choice", and distinguishes it from occupational preference and occupational aspiration on the one hand, and actual occupational entry on the other. Crites argues that an individual must make a choice before he can act in one way or another and the "choice act" can be defined independently of the course of action an individual follows. Crites also makes a distinction between choice and preference, the former being a more comprehensive term than the latter. In Crites's words "when an individual expresses preference he ranks two or more occupations along some continuum of desirability and liking. In contrast, when he makes a choice, he ranks two or more occupations along a continuum of his estimated chances of actually entering them". Kurlesky and Bealer (1966) in their attempt to clarify the concept of occupational choice,

suggest that it should not be equated with the total development process involved in occupational attainment, but should mean only "the psychological preferences or desires that the individual has regarding work status", thus being equatable to the term "aspiration". They favour a distinction therefore between aspirations or preferences and all the socio-economic factors over which the individual has little control. They further argue that "aspiration" incorporates the feeling of "wanting" whereas the term "expectation" tends to reflect reality more accurately. Overall, there is some agreement that only when there is a degree of occupational maturity which incorporates a number of socio-economic and personal factors, that the concept of "choice" can be meaningfully used.

3.2 The concept of occupational choice can be studied at different levels of analysis, and in different fields of analysis. For example, a "level" refers to the generally perceived place of a job or occupation in some kind of status hierarchy, dependent on the skill which has to be exercised, the remuneration, or the respect paid by others in society - or by a combination of these. Thus Roe (1956) identifies: Professional and Management levels 1 and 2; Semi-Professional; Small Business; Skilled; Semi-Skilled; and Unskilled. Secondly, a "field" refers to a particular area of activity, no status difference being involved. Thus Roe's system identified 8 fields - service to others, business contact, organisational, technological, outdoor, scientific, general, cultural, arts and entertainment. Holland discriminates between 6 fields which correspond to modal life styles - realistic; intellectual; social benefit; conformist; entrepreneurial; and artistic.

Mitchell and Beach (1976) argue that there are 2 main approaches to the study of occupational choice: normative and descriptive. The normative approach is concerned with how the decision ought to be made - mathematical models and the kinds of information that should be used, and how it should be evaluated. The descriptive approach actually examines how people make the choice.

Many theorists interested in occupational choice have indeed interpreted it as a decision-making process involving the whole personality, and have accordingly applied general psychological theories to specific theories of occupational behaviour. Reciprocally some theorists have implied that decisions about choice of work can actually modify the personality. For example, Roe (1964) felt that occupational behaviour can be indicative of basic personality dynamics and subsequent research could contribute to a general psychological theory.

Theorists who have developed specific theories of occupational choice have been traditionally grouped into 2 broad classes. The "differentialists" are those who have concentrated their research interests on individual difference, who have been interested to discover to what extent and in what way people in one field of work differ from those in others. The "developmentalists" have concentrated on how any one individual develops ideas about work in general, and the stages he goes through in developing and modifying his ideas.

3.3 Differentialists

The differentialist approach fundamentally assumes that occupational choice is a matching process. In other words, that individuals differ in abilities and personalities, and that jobs differ in requirements and that both profiles must be reasonably congruent. This rather atheoritcal trait-matching approach was typified by Parson's (1909) assertion that the choice of occupation consists of 3 phases " .... (1) A clear understanding of yourself, your aptitudes, abilities, interests, ambitions, resources, limitations and their causes; (2) A knowledge of the requirements and conditions of success, advantages and disadvantages, compensations, opportunities, and prospects in different lines of work; (3) True reasoning on the relations of these 2 groups of facts".

One of the earliest contributions of this field was Kitson's (1925) "psychology of vocational adjustment". One of the basic

elements of his work was the theory of individual differences, the fact that individuals differ in attitudes, interests and values and these differences are significant for an individual's occupational adjustment. Patterson and Darley (1936) establish that abilities and interests fall into patterns which distinguish one occupation from another, and this has been confirmed by numerous other studies eg Strong's (1943) work on the classification of occupational interests. These early differentialists emphasised ability and special aptitudes as the dominant psychological determinants of occupational choice. More recently, research has concentrated on interests, values, and personality characteristics, all within the "trait matching" framework.

3.4 Occupational Choice Personality Theories

Some of the more major contributions to the trait-matching approach have come from those researchers exploring the realm of occupational choice from the "personality" angle. The main criticisms of this approach focus on the degree of overlap of one job's characteristics with another, preventing job specification in terms precisely equatable with personal characteristics. Secondly, the probability of personal development implies that the traits of a 16 year old are not those of the same person at 25 years. Thirdly, there is evidence that individuals with different traits, ambitions and so on, can do the same job effectively. Occupational choice, therefore, would appear to be more subjectively specific than trait-theory prediction would allow.

Holland (1966; 1973) and Roe (1957) are the best known theorists in this group and hypothesize that the jobs people select are the ones that will potentially satisfy their needs and match their personalities. Roe (1957) and Rosenberg (1957) introduced models to explain the effects of personality on choice, and they both concentrated on the cognitive-affective orientations people have about the world around them. Roe observed that people differ in their affective orientation towards or away from persons, and that occupations also differ in the extent to which they involve dealing with people. Roe argued that such differences are to a

considerable extent rooted in childhood. Roe (1957) outlined a theory in which the child's early experiences with his parents are assumed to create or foster "basic attitudes, interests, and capacities which will be given expression in the general pattern of the adult's life, in his personal relations, in his emotional reactions, in his activities, and in his vocational choice". From 3 characteristic family atmospheres - emotional concentration on the child, avoidance of the child, and acceptance of the child - Roe predicts the resulting adult orientations and the classes of occupations to which such early childhood experience will lead. For example, emotional concentration on the child, which takes the form of over-protectiveness or over-demand, is assumed to produce children who enter the arts or the entertainment field. In contrast, parental avoidance, which takes the form of neglecting and rejecting relationships, is assumed to be conducive to the development of scientific interests. Roe developed a job classification system based upon a 'people' - 'non-people' uni-dimensional continuum of interest. Accepting such theories of human needs as Maslow's, Roe argues that the completely gratified need is no motivator, and the seriously blocked psychological need leads to maladjustment; but that the needs which parents satisfy minimally become unconscious motivators and directly influence the individual's preference for activities - such as working with things or with people. Unfortunately, much of the empirical investigation of Roe's theory is nebulous and ambiguous.

Roe treated predisposition towards or away from persons as uni-dimensional, as also did Korman (1966) and Hill (1944) when using the construct of interpersonal need strength", and Wasserman et al (1969) when using a construct of 'intimacy". Little (1972b), on the other hand, assumes that the only way people construe the world around them can be most fundamentally described in terms of their orientation towards persons and things (including physical objects and ideas unrelated to persons). Little (1972b) has shown these predispositions to be orthogonal. Little has developed a theory of Person/Thing Specialisation which

hypothesises that persons with different combinations of orientation towards persons, and orientation towards things will transact differently with their environments. Thus, persons simultaneously high in orientation towards persons, and low in orientation towards things (person specialists) might be expected to react differently to situational experiences and to make different career choices from those low in orientation towards persons, and high in orientation towards things (thing specialists); and from those high in both orientation (generalists) or those low in both orientations (non-specialists). It is hypothesised by Little that a person's pattern of orientations towards persons and things predispose him or her to seek a career that offers work with a similar pattern of involvement with people and things.

Rosenberg (1957) also assumed that choice of occupation is a form of personal adjustment to one's environment. He argued that the values an individual holds about life and work will act as a predictor of occupational choice. Rosenberg distinguished between the 3 following value-complexes: (a) people-orientated, (b) extrinsic-reward orientated, and (c) self-expression orientated. He also argues that an indiviual's predominant value-complex is commonly derived from family interaction in that parents tend to mediate between the child and the economy and socialise their children in terms of their own economic roles. Rosenberg also believed that political, economic, educational and religious systems would all have an influence in shaping these values and thus occupational choice, but the precise effect of these systems is not clear.

Psychoanalytic literature tends to relate the process of occupational choice to the need for libidinal gratification. Jones (1918), Adler (1929), Freud (1933) and Edwards (1940) have argued that basic occupational choices are subject to subconscious controls such as identification, sublimation, rationalisation, the post-Oedipal conflict and the Adlerian concept of compensating motivations. An even more explicit psychoanalytical theory of occupational choice was provided by Brill (1949) who stated

that "every activity or vocation not directed to sex in the broader sense, no matter under what guise, is a form of sublimation". The individual is socialised to adjust to his aggressive and sexual needs in ways which meet social approval. His style of coping forms his character, personality, and consequently choice of occupation. Thus certain personality types will make characteristic choices of work and adjustment. Bordin, Nachmann and Segal (1963) have attempted to apply psychoanalytic theory to account for the process of vocational preference. They propose a matrix of need-gratifying activities, traceable to infantile psychological functions, which will account for all of the gratifications which work can offer. However, it seems impractical to extend the theory to a large number of occupations as each occupation's need-gratifying potential has to be mapped out on its own matrix. Indeed, all the psychoanalytic theories have been extremely difficult to evaluate empirically.

Holland (1966) has developed what is essentially a trait-matching theory but Holland (1976) has recently described the theory as a "modern differentialist view", as it also makes use of developmental concepts as well as sociological and economic factors. Holland's theory makes predictions that an individual will choose an occupation that is consistent with his particular personality type. In other words occupational choice is explained as the result of a person searching for work situations which provide outlets for his particular preferred strategies for dealing with life problems. The 4 main elements of Holland's theory are as follows:

(1) In our Western culture, most persons can be categorised as one of 6 types - realistic, investigative, artistic, social, enterprising, and conventional; (2) there are 6 similar kinds of environment each dominated by a given type of personality; (3) people search for environments that will let them exercise their skills and abilities, express their attitudes and values and take on agreeable problems and roles; (4) a person's behaviour is determined by an interaction between his personality and the

characteristics of his environment. No job falls exclusively into one of these groups, nor do individuals take up one of the accompanying orientations, but individuals are seen to differ according to the arrangement of the hierarchy of their preferred orientations. Holland has developed measuring instruments both to assess an individual's personality profile (the Vocational Preference Inventory) and to define the environment (the Environmental Assessment Technique). Holland's theory has stimulated suitable research activity which in turn appears to have generated a certain amount of supporting evidence for his main hypothesis. Most of this research work was American with occasional contribution from New Zealand, Australia, France and Germany with little research work in Britain.

Holland argues that there is a need to integrate knowledge of occupational choices, occupational interests, and the characteristics of people in different occupations and to develop theories for coping with this knowledge. Holland attempts to explain the phenomena in terms of similar dimensions and argues that the data about occupational choice, occupational interests, and occupational membership are positively associated because they represent 3 methods for assessing the same set of personal dispositions. For example, occupational interest scales have been shown to correlate positively across many classes of psychological variables - like personality measures, aptitude tests, self-estimated competancies, perceptual tests, and other psychological and sociological variables. Strong Vocational Interest Blank scales have correlated positively with the Edwards PPS (Dunnette, Kirchner and DeGidio, 1958), Q-Sort ratings of personality (Block and Peterson, 1955), objective perceptual performance tests (Crutchfield, Woodworth and Albrecht, 1958) and the California Psychological Inventory (Gough, 1957; Dunnette et al 1958). Holland argues that the intercorrelation of occupational interests and various personal variables implies that the same 4 to 8 dispositions are expressed in many ways, and a small number of personal dispositions may account for what we know about the concepts of occupational choice, interest,

preference, and occupational membership.

3.5 Developmentalists

Traditional trait-matching theory is essentially atheoretical and ignores the individual's self-concept, or "why" and "how" he makes particular occupational choices. Developmental theorists attempt to replace this essentially static approach with an explanation of occupational choice as an evolutionary sequence of occupational decisions. These theorists tend to segment working life into life stages and try to develop norms of occupational behaviour for each stage.

This developmental approach has been primarily evolved in America by Ginzberg (1951), Super (1953) and Tiedeman (1961) and it has been mainly adopted in Britain by Daws (1968, 1977) and Hopson and Hayes (1968). The developmental theories still make use of the trait-matching approach but they emphasise the fluctuating nature of these traits and the fluctuating influence of these traits upon the individual's concept of himself and his occupational world. Therefore, the developmental approach is not an alternative to the differential approach but rather the differential trait-matching theory is absorbed within the developmental framework.

The developmental theories were developed initially by Ginzberg (1951) and reflect the development of the more complex concept of any act of choice being one of a series which adds up to a choice process spanning from before school-leaving age until retirement. This approach stressed the continuity of an individual's psychological development, and so also raised the related concepts of occupational maladjustment. This theorizing has evolved from educational and child psychologist's general developmental approach. For example, Buehler (1933) and her life stage of growth, exploration, establishment, maintenance and decline, have stimulated many writers.

Ginzberg's research was the first attempt to explain theoretically

The occupational choice process. The essential point made by Ginzberg was that the vocational process was largely irreversible and that the further one proceeds due to such irrevocable decisions as the choice between educational alternatives, mainly due to the time factor, but also to the personal development of interests, values and life style, the harder it becomes to change one's occupational direction.

Ginzberg et al (1951) identified 3 common approaches to theories of occupational choice. Firstly, many people think that the occupational decisions were made 'accidently', but Ginzberg, while agreeing the importance of external factors in the choice process emphasises that the way in which the person takes account of the external factors depends on the way in which he perceives and reacts to them. A second approach, is that occupational choice can only be understood by understanding the unconscious forces in individual behaviour. The limitations of this approach is that a variety of occupations may permit expression of the same emotional impulses. A third approach is to attempt to evaluate abilities, aptitudes, interests and values.

Ginzberg's theory contained 4 main elements. Firstly, that occupational choice is a developmental process which typically takes place over a period of some 10 years. Secondly, the process is largely irreversible. Thirdly, the process of occupational choice ends in a compromise between interests, capacities, values and opportunities. Fourthly, that there are 3 periods of occupational choice; the period of "fantasy" choice, governed largely by wish to be an adult; the period of "tentative" choice beginning at about 11 years and determined largely by interests, then by capacities, then by values and the period of "realistic" choices beginning at about age 17 years.

Super (1953) provided the second major contribution to the theoretical debate in understanding occupational choice. He expressed the view that Ginzberg's theory had 4 important limitations. Firstly, it did not build adequately on previous work eg

the research on nature, development and predictive value of inventoried interests. Secondly, choice was defined as preference rather than as entry or some other implementation of choice, and hence means different things to the 14 year old schoolboy, and the 21 year old student. Thirdly, a false distinction was made between 'choice' and 'adjustment' but Super feels that there is no sharp distinction. Choice is a continuous process going on over a period of time, rather far removed from reality in early youth but involving reality in increasing degrees with increasing age. Choice and adjustment blend in adolescence. Fourthly, Super argues that although Ginzberg properly concluded that occupational choice is one of compromise between interests, capacities, values and opportunities, he did not study the compromise process itself. Super felt the nature of the compromise between self and reality was the crux of the problem of occupational choice.

The initial formulation of Super's (1953) theory was general in nature applying developmental psychology to vocational* choice and adjustment. The work of Buehler (1933) had a great influence on Super's theory and he adapted Buehler's life stages of growth, exploration, establishment, maintenance and decline into his vocational development theory. Super was also influenced by the work of Miller and Form (1951) regarding patterns of work, and it was their work which formed the basis of his career patterns concept. Super felt that there was a certain predictable vocational patterning into which individuals fell based upon a variety of factors such as physical, social, and economic. The following is a summary of the major propositions of Super's theory:-

1. People differ in their abilities, interests and personality traits.

* Super chose the term "vocational" to reflect the developmental and psychology of careers approach. He reserved the term "occupational" for the psychology of occupations which he argued was based on the differential and trait-matching approach. In other words, this approach concentrated on matching the individual to an occupation at one particular point in time.

2. The situations in which people live and work, and hence their self-concepts, change with time and experience, making choice and adjustment a continuous process.

3. The process of vocational development is essentially that of developing and implementating a self-concept through compromise between individual and social factors, between self-concept and reality.

4. Work and life satisfactions depend upon the extent to which the individual finds adequate outlets for his abilities, interests, personality traits and values.

The aspect of the self-concept of most concern to Super is the vocational self-concept. According to Super et al (1963), self-concept formation requires a person to recognize himself as a distinctive person, yet at the same time to be aware of the similarities and differences between himself and others. Super believes the self-concept is implemented through an individual's choice of an occupation that has a pattern of behaviours and attitudes which will allow him self-expression. The behaviours used to implement the self-concept are a function of a person's stage of life development.

Super (1963) states that "in expressing a vocational preference, a person puts into occupational terminology his idea of the kind of person he is; ..... in entering an occupation he seeks to implement a concept of himself; ..... in getting established in an occupation he achieves self-actualization. The occupation thus makes possible the playing of a role appropriate to the self-concept". Super describes the growth of the self-concept in terms of 3 broad phases: (a) formation up to the early teens when development is through identification with significant figures, and choice dominated by needs and fantasies is superseded by choice dominated by interests and capacities, modified by increased social participation and reality testing; (b) translation when the self-concept begins to be translated into

occupational terms, and tentative choices are modified against the developing self-consciousness; (c) implementation when after a work period, effort is made to establish and maintain oneself in a particular career. Super, therefore, sees occupational development as developing a 'self-concept' as a worker, and occupational choice is the process of seeking work where the requirements are consistent with one's view of oneself.

Super (1953) argued that the concept of life stages is basic to vocational guidance. Super's life stages are drawn from the work of Buehler (1933), Miller and Form (1951) and Ginzberg (1951). Buehler's theory of development through the exploratory, establishment, maintenance and decline stages is translated into occupational terminology by Miller and Form. Super summed up the developmental process in a series of life stages characterized as those of growth, exploration, establishment, maintenance and decline, and these stages in turn may be sub-divided into (a) the fantasy, tentative, and realistic phases of the exploratory stage, and (b) the trial and stable phases of the establishment stage.

However, in 1963, Super added tentative, transition, and uncommitted trial substages to the exploration stage. To the establishment stage he added committed trial and advancement substages. In 1973, Super redefined the substages of establishment as (a) trial and stabilization, and (b) consolidation and advancement. The process of growth occurs by means of the following 5 activities which Super (1963) called developmental tasks.

1. crystallization: formation of ideas of work and self; usually ages 14-18
2. specification: narrowing from a general career direction to a specific one; ages 18-21
3. implementation: completion of some training and entering into relevant employment; ages 21-25

4. stabilization: settling down in a field of work; ages 25-35, positions may change but rarely a vocation

5. consolidation: firmly establishing self in an occupation; aged 35 plus

As Thorensen & Ewart (1976) have noted, Super's work on career development has generated considerable research and acclaim from Crites (1969), Holland (1969), O'Hara (1969) and Osipow (1973). However, little attempt has been made to test the self-concept implementation aspect of the theory. Mansfield (1973) is an exception but even he has used the narrower concept of self-esteem. Also, Super's theory does not allow for the differential vocational development of men and women, and his theory was formulated on research based on white middle-class males (Super and Overstreet 1960). LoCascio (1974) and Richardson (1974) both make the point that Super's theory only reflects the common cultural expectations of white middle-class males. Richardson also argues that the life stages involved in the development of a career role is a process of development which is more continuous for men than for women. Kline (1975) is highly critical of the usefulness of Super's theory which he sees as consisting "merely of a number of empirical statements of banal and generalized truths which enable us to predict or understand vocational problems little better, if at all, than if we had never seen them".

Tiedeman (1963) has elaborated on Ginzberg's and Super's ideas by emphasizing the actual process of choice. Like Super, he interprets a career as a sequence of jobs and has been exploring a variety of theoretical models for understanding career patterns and a number of statistical techniques for their differential prediction. In formulating stages of development Tiedeman has drawn heavily upon Erickson's (1950) concept of psychosocial crises which accompany each stage. Tiedeman defines vocational development as a process of decision-making where each decision to be made has two basic characteristics (a) a period of anticipation, consisting of the processes of exploration, crystallisation, choice and clarification; (b) a period of implementation,

consisting of induction, reformation (of oneself in terms of "in job" experience) and integration with the job demands and the work group. Tiedeman rather denies the concept of irreversibility by arguing that a person may return from the crystallization period to the exploration period if the compromise seems unacceptable, and yet always tending towards choice and subsequent implementation.

3.6 The Sociological Model of Occupational Choice

It is mainly the sociologists who have criticized psychological theories for emphasizing the psychological act of choosing, and rather ignoring the social and economic factors which condition such choices. Blau et al (1956) present a framework for the understanding of occupational choice that constitutes an attempt to combine psychological, economic and sociological variables. Occupational choice is seen as a compromise between preferences for and expectations of being able to enter a particular occupational field. They emphasize that occupational choice is dependent not only on self-concept development but also on the development of the social and economic conditions of selection. In other words, social structure has a dual significance for occupational choice. On the one hand it influences the personality development of the choosers; on the other it defines the socio-economic conditions in which selection takes place. Occupational choice is, therefore, conceived as a process of compromise, which is continually being modified between preferences for and expectations of being able to get into, various occupations. This restricting factor on the freedom of choice is often underemphasized by the developmental theorist's concern with basic needs, patterns of personal orientations and the occupational implementation of the self-concept.

British sociologists, like Roberts (1968; 1973), Haystead (1971), Musgrave (1967), Coulson, Keil, Riddell and Struthers (1967), Williams (1974), have been active in the field of occupational choice theory and their influence is reflected in much of the British research on the effects of home background, type of school

and social class. Roberts (1973, 1977) denies the concept of occupational choice, and he proposes his "opportunity structure" theory in which "careers can be regarded as developing into patterns dictated by the opportunity structures to which individuals are exposed, first in education, and subsequently in employment. Individual's ambitions in turn, can be treated as reflecting the influence of the structure through which they pass". Roberts fatalistic view implies that the situation is beyond our control and that any formal vocational guidance is pointless. Much of the research data tends to support this interpretation. For example, there is ample evidence of the constraining influences of environmental and personal factors, and it is clear that often 'choices' are less than rational and conscious acts of decision, and that the range of an individual's occupational knowledge is often very small. However, Roberts's view has been interpreted by some commentators, including Daws (1977), as rather extreme. Daws (1977), in fact, suggests that the Roberts argument highlights the need for even earlier vocational guidance in order to modify the influence of environmental factors, and to increase self-knowledge and awareness of occupational opportunities. Furthermore, such vocational guidance intervention would be more effective if teachers and counsellors, for example, became more aware of how occupational choices develop.

Most sociological theories are concerned with the limitations imposed by social structures, and their influence on the process of socialization and role play. Musgrave (1967) has applied role theory to the concept of occupational choice. He argues that occupational choice should be analysed through the concept of socialization to economic roles. The process of socialization is traced through 4 stages: pre-work socialization; entry to the labour force; socialization into the labour force; and job changes. Initially the principal agents of socialization are interpreted as family, school and peer groups. Haystead (1971) stressed the importance of "awareness contexts" - ie the extent to which the individual is aware at different points in time of (1) being faced by competing alternatives, (2) his own characteristics, and

(3) occupational characteristics and requirements. Ford and Box (1967) are 2 sociologists who emphasize the concept of rationality in choosing occupations. They summarise occupational choice as a culmination of a process in which "hopes and desires come to terms with the realities of the occupational market situation".

3.7 Application of Expectancy Theory and Decision Theory to Occupational Choice

Several occupational choice theories have been concerned with decision making, and have been derived from psychological and problem solving models. The essence of expectancy and decision theories is that individuals choose occupations by means of a rational process whereby desired ends are judged against the perceived probability of attainment. Developmental theorists have concentrated on a macro level of analysis which takes account of interests, values and the self-concept and its development; whereas expectancy theorists argue for process theories at a micro level which accounts for specific occupational preferences, intentions and actions at any one point in time. The decision or expectancy theory approach, therefore, is complementary to the developmental theories and more suited to the study of specific behaviour at the micro level.

3.8 Expectancy Theory: Vroom (1964) made the first explicit formulations of expectancy theory. The theory is based on the idea that "the strength of a tendency to act in a certain way depends on the strength of an expectancy that the act will be followed by a given consequence (or outcome) and on the value or attractiveness of that consequence (or outcome) to the actor" (Lawler 1973 p 45). Such concepts are familiar to many major theories of learning, decision-making and attitude formation but Vroom introduced the concepts to occupational psychology. According to Vroom, therefore, occupational choice is seen as dependent upon the degree to which a given alternative is seen as more likely to lead to valued outcomes than any other alternative. The alternative is selected which has the highest expectancy-value score, and this score in turn is the sum of the products of belief strengths and evaluations.

The beliefs are of the probability of certain outcomes resulting from the choice of that particular alternative, and the evaluations are of each of these outcomes.

Mitchell and Beach (1976) outline 3 major problem areas for the expectancy theory approach. Firstly, they argue that it is not clear how an investigator should determine what outcomes are most salient for a particular individual. Secondly, they consider that the measurement of beliefs is unclear sometimes reflecting importance and sometimes affect. Thirdly, the models have been constructed a priori and empirical studies have not yet evaluated their usefulness.

3.9 Decision Theory: Edwards (1954, 1961) was one of the first psychologists to use decision theory principles as a model for behaviour. The decision theory model states that the expectation for any action is the algebraic sum across potential outcomes, of the values of each of the possible outcomes of that action and of their respective probabilities of occurrence should the action be performed. The maximization principle then prescribed that the action that has the maximum expectation should be the one chosen.

In terms of occupational choice, all possible occupations (ie ones with a good chance of attainment) being considered would be the alternative actions. The individual then assesses his or her subjective probabilities that each occupational alternative would lead to various job outcomes (eg pay, promotion, autonomy etc), and also the value he attaches to gaining or failing to gain each outcome. The subjective evaluations are computed for each occupational alternative, and the individual should choose the alternative with the maximum probability of occurrence. While theoretical, mathematical and methodological differences exist among these decision theory approaches, they are all based on a simple rational principle. They assume that people will choose the occupation they believe will result in the greatest amount of benefit to them, provided there is a good chance they can actually attain a position in the occupation.

There is little evidence in the British research to show that choices follow this rational process and indeed, the decision-making model ignores the possibility that choices may be arrived at by a series of negative decisions. As Jones (1973) has argued, some individuals go through life avoiding certain outcomes and ruling out undesired alternatives so that they may end up at a particular outcome purely by the exercise of negative decisions, and yet never have chosen that destination in any purposeful sense nor even thought about it. Jones (1973) stated that "for a considerable number of people, the educational or occupational option which is eventually taken up, may be simply a residual".

Finally, it should be clear that the expectancy and decision theory approaches are almost identical. They both assume the maximization principle which prescribes that the action that has the maximum expectation should be the one chosen. The main distinctions revolve around the more mathematically orientated traditions of decision theory but in practice, there is no difference in the practical application of the 2 approaches.

Many other authors have applied general psychological principles to the process of decision-making in occupational development. For example, Hilton (1962) has applied Festinger's theory of cognitive dissonance to occupational choice. Hilton sees career development as the "accretion of a chain of decisions", so that the ability to make decisions becomes of crucial importance.

Hilton suggests that decision-making is a skill that can be taught. Ziller (1959), Kalder and Zytowski (1969) and Gelatt (1962) have preferred more classical decision theory models. The latter have attempted to develop a "risk" model seeing occupational choice as similar to a gambling decision, and also aim, thereby, to introduce a greater rationality into the process. For example, there is a tendency to prefer an occupation in which one expects to succeed.

Miller (1968) attempted to use learning theory to explain decision-making in occupational development. For example, Miller sees a

person's occupational choice as contingent upon multiple, partial reinforcements received from birth to death from the personal and impersonal aspects of his environment. Increased stability with age may also be congruent with increased ability to locate situations where they will receive an increasing number of positive reinforcements. It is clear that a child's parents, social class and school provide a vast range of positive and negative reinforcements depending upon parent's income, education and physical setting. Miller argued that the differences in occupational choice for men and women strengthen the same hypothesis, and the tendency for students to conform to popular fields. Krumboltz (1976) proposes a similar view and his theory argues that "certain environmental and cultural events that facilitate or inhibit the reinforcing and punishing consequences contribute to various occupational preferences". Krumboltz's social learning theory was designed to explain how decision-making skills are developed as a result of the interaction between genetic endowment and learning experiences. Krumboltz's theory, however, lacks empirical evidence at this stage.

3.10 Application of Occupational Choice Theory to Women

Several prominent occupational choice theorists (Crites, 1969; Ginzberg, 1972; Harman, 1970; Holland, 1966; Osipow, 1975; Tiedeman and O'Hara, 1963; Vetter, 1973; Zytowski, 1969) have noted the absence of and need for special theories on the career development of women. Osipow (1975) states that most occupational choice theories are designed "to understand the career development of a middle-class, probably white, American male. Thus application of the concepts, let alone derived data, to such groups as women is clearly problematical".

Tiedeman and O'Hara (1963) decided to concentrate on a theory for men when they came to the decision that a separate theory of career development was needed for men and women. Holland (1966) also felt that it would be desirable to have a separate theory for women. Ginzberg (1972) remarked that "the male model of preparation and choice followed by a clear-cut shift to full-time work

and a career did not fit the female prototype. Many women interrupted their educational preparation for marriage and their career development was frequently marked by shifts between work and home" (p 172).

Psathas (1968) and Zytowski (1969) independently set forth their views on the unique elements in the career development of women. In Psathas' view the major sources of an individual's value orientation are traceable to the family and social class grouping of which she is a member. Psathas emphasised that an understanding of the factors which influence entry of women into occupational roles must begin with the relationship between sex role and occupational role. This concept is supported by Richardson's (1974) suggestion that a viable career theory must be based on an understanding of women's underlying sex role orientation, and Tiedeman and O'Hara's (1963) opinion that the kind of resolution a woman achieves of her sex role is a major influence in her career.

Psathas further cites the relationship between sex role and occupational entry as being influenced by intention to marry, time of marriage, reasons for marriage, and husband's economic situation and attitude toward his wife's working. During the period between "leaving school" and "getting married", Psathas perceives the choice of marriage or an occupation as conditioned by an awareness on the part of the woman and her parents of the desirability of the acquisition of skills and qualities which makes the woman more marketable in marriage terms. Also, the long-term occupational plans of women are obviously influenced when children are both expected and desired shortly after marriage. Additional considerations in Psathas' theory relate to family finances, education and occupation of parents.

Zytowski (1969) attempts to outline a developmental theory for women, and the following summarizes the main propositions.

1. The modal life role for women is that of homemaker.

2. The nature of the woman's role is not static and will ultimately bear no distinction from men.

3. The life role of women is orderly and developmental.

4. Vocational and homemaker participation are largely mutually exclusive; vocational participation constitutes departure from the homemaker role.

5. Three aspects of vocational participation distinguish patterns of vocational participation: age or ages of entry, span of participation, and degree of participation.

6. Women's vocational participation may be on several levels (a) mild - very early or very late entry, a brief span, and a low degree of participation; (b) moderate - early entry, a lengthy span, and a low degree of participation; and (c) unusual - early entry, a lengthy or uninterrupted span, and a high degree of participation.

7. Women's preference for a vocational pattern is accounted for by motivational factors.

8. Vocational participation is determined jointly by motivation, situation, and environment.

Research Relating to Occupational Choice Theory

3.11 Methodologies

Most research studies in Britain have concentrated on investigations at a particular "point-in-time", like, for example, at such typical choice points as the end of the 5th form year, end of secondary education or end of tertiary education. Recent British investigations using this method have been conducted by Jahoda (1952), Liversidge (1962), Ford and Box (1967), Brown (1969, 1971), Ching (1970), Maizels (1970), Hutchings and Clowsley (1970), Timperley and Gregory (1971), Inkson (1968, 1971),

Mansfield (1971, 1973), Kelsall et al (1972), Richards (1973), Selkirk (1973), Sills and Portwood (1971), Rauta and Hunt (1975), Kaneti-Barry et al (1971), Ramage (1975), Market and Opinion Research International (MORI) (1977). Most of these "point-in-time" approaches interpret choice as an event, although some studies which have interpreted choice as a process have attempted retrospectively to analyse choice points and past experiences.

Some studies have tended to be predominantly descriptive by only reporting on the actual choices (eg Jones (1968), Timperley and Gregory (1971), Sills and Portwood (1971) and Randall (1977)). Very few researchers have studied groups of different ages although Hill (1969) was an exception, and only a few longitudinal investigations have taken place. Douglas (1971), McPherson (1973) and Thomas and Wetherall (1974) all used longitudinal designs but they have not, like Super's Career Pattern Study in America, been designed to explore the occupational choice process.

Perhaps the largest amount of research has concentrated on the personal and situational correlates of occupational choice outcomes. Psychologists have typically investigated the influence of personal factors like sex, personality, intelligence and interests, while sociologists have typically investigated environmental characteristics like family background, social class and type of schooling.

3.12 Summary of Research Findings Relating Personal and Situational Factors to Occupational Choice

Intelligence appears to have an effect on level of choice (eg Thomas and Wetherall (1974), Chown (1959) and Sneath (1970)), but the relation of intelligence to decision-making approaches, or the appropriateness of the occupational choice is not well understood. However, the effect of intelligence may be less significant than social class (Douglas 1971; McPherson, 1973), type of school (Swift, 1973), and sex (McPherson, 1973, Kaneti-Barry et al, 1971).

There have been only a few British research attempts to relate personality traits, like self-esteem or confidence, authoritarianism and need for achievement to level and field of occupational choice. Inkson (1968, 1971) found evidence for a relationship between occupational choice and achievement motivation. Mansfield (1973) inferred from his findings that individuals both high and low in self-esteem were attempting to match their self-concept against occupational requirements but that high self-esteem individuals are more able to make a better fit. Many other British studies have concentrated on the personality differences between arts and science students (Hudson, 1966; Hutchings, 1968; Dunhan, 1968 and 1973). There has been no British investigation of the relevance of Hollands personality - environment matching theory.

The research does tend to indicate a relationship between interests and occupational choice, and as Butler (1968) indicates interests have usually been assumed to form the basis of most choices. Wilson (1953), Hill (1965), Sneath (1970) and Reid et al (1974) all have shown a relationship between expressed interests and choice. Nelson (1971), and Brown,G(1971) have shown a relationship between tested or inventoried interests and occupational choice. However, it still remains unclear how such interests are developed, or how they relate to other personality traits.

Sex is not itself a determinant of choice but society creates sex-role stereotypes about what activities and occupations are appropriate to each sex, and this in turn determines occupational choice. Hutchings (1968), Mansfield (1971), Kaneti-Barry et al (1971), Kelsall, Poole and Kuhn (1972), McPherson (1973), Cherry (1975) provide supporting evidence that traditional sex-role stereotypes are very influential in choosing occupations. There is no substantial evidence on the relationship between sex and the level of occupational aspiration.

Sociologists have concentrated on the effect of environmental variables on occupational choice, and only the generalized findings will be presented here. There seems little doubt that social

class and racial background have a significant influence on the level of occupational choice. Type of schooling strongly influences occupational choice aspirations at all ability levels, but the geographical region or area only seems to constrain the less able youngsters. Richards (1973) notes that there is general agreement about the independence of these variables, but little information exists on how they relate to each other and which environmental variables have the most powerful effect on occupational choice.

3.13 Research in UK Relating to Developmental Theories of Occupational Choice

Several British researchers have attempted to explore how occupational choices develop over time, and to determine the applicability of American theory to the British scene. Most studies have used "point-in-time" surveys relying on direct recall of past occupational choice decision-making, and there has been no longitudinal study specifically designed to investigate the occupational choice process.

However, Chown (1958) designed a retrospective study to determine if Ginzberg's life stages could be appropriately applied to British youngsters. According to Chown, British children paid less attention to the influence of others, and more to the conditions of the job. They rarely seemed to mention capacities, and they achieved a "balanced outlook" later than American children were reported to. She found that between the ages of 13-14, interests and conditions of work were the prominent reasons given for choices: between ages 15-16, the prominent reasons were interests, conditions and altruism, and it was only between ages 17-18 that capacities were mentioned in conjunction with interests, conditions and altruism.

Wilson (1953) explored the development of realistic attitudes to occupations among school-leavers. She inferred from her findings that realistic attitudes often developed soon after transfer to secondary school. Hill (1969, 1976) concentrated on how choices

and attitudes to work develop. Hill suggested that youngsters go through 4 stages: (i) mid-latency (ages 7-9) in which the child had a rather fanciful idea of adult work; (ii) threshold of adoloscence (10-12) in which most children develop a more realistic approach to work and the beginnings of attempts to relate school and work; (iii) mid-adolescence (13-15) in which many children developed work plans but these often tended to be invalidated by insufficient occupational knowledge; (iv) late adolescence (16-18) in which many children had developed complex strategies of approach to work, relating an appreciation of their own abilities to the social system as a whole. There have been no attempts to replicate or substantiate Hill's findings.

Some other studies used university student samples and asked them to recall making their occupational choices. Lynch (1968), Brown (1969, 1971), Kelsall, Poole and Kuhn (1972) and Ramagge (1975) all seemed to show that a large proportion of graduates appear to delay occupational choices until after their entry into tertiary education, and often until the end of their tertiary education.

3.14 Relationship of the Present Research to Occupational Choice Theory

The following sections will attempt to explain in more detail the relationship of the author's occupational belief system model to occupational choice theory. The author's occupational belief system (OBS) model of occupational choice will be discussed in relation to the work of Super, Holland, Dawis and Lofquist, and in relation to expectancy theorists. These 4 areas of work are considered by the author to be the most closely related to the present theoretical development. These sections will be concluded with a formal presentation of the occupational belief systems theory of occupational choice.

3.15 Relationship between Super's Theory and OBS Theory

A fundamental premise of Super's theory is that a choice of occupation is an attempt to implement a self-concept. In other words, individuals tend to enter occupations they see to be

congruent with the evaluation of their own identity. Super's argument in 1953 is still reflected in his most recent papers when he said that "satisfaction in one's work and on one's job depends on the extent to which the work, the job, and the way of life that goes with them, enable one to play the kind of role that one wants to play".

Roberts (1968), however, has been a major critic of Super's work, and he has attempted to empirically test Super's theory of vocational development. Roberts (1968) found no evidence of a tendency for young people to gravitate into occupations consistent with their aspirations, and he argued that ambitions adjust to occupational changes rather than changes being planned in order to realize previously developed ambitions. Roberts also found evidence to suggest that youngsters adjust to the jobs they find and that occupational ambitions are based upon occupations they expect to enter rather than upon vocations they would ideally like to choose. Roberts' findings, therefore, suggest that ambitions are chosen on the basis of occupations entered, rather than the reverse as Super argues.

It certainly seems unnecessary to the author, within Super's theoretical formulations, to relate occupational choice to a self-concept which is tempered by a realistic awareness of what occupations are really like. Such a realistic appreciation of occupations will evolve from the social context in which the self-concept arises, and the part played by social institutions in the choice process. The advantage of introducing the belief system approach is that these problems are overcome because the belief system is reciprocally related to the unique experiences of every individual. In other words, Super's theory may be applicable to some individuals, but the theory is vulnerable to the claim made by LoCascio (1974) and Richardson (1974) that it only reflects the common cultural expectations of white middle-class males.

Super's views also seem to imply that work is highly salient for

all men and indeed, a central assumption of most career theorists has been that all men do desire to work. A fundamental assumption of the OBS theory is that all men do not desire to work. With regard to this assumption Osipow (1973, pp 307-308) has observed that "seldom is any consideration given to the likelihood that an individual may have negative attitudes toward work ..... which could account for some of the difficult-to-understand behaviour concerning career decisions that is sometimes observed in reasonably well-endowed individuals".

There may also be reasons to believe, as Super (1977) seems to accept, that there may be developmental changes in the salience which occupations hold for many individuals. Jung (1933) suggested that at the mid-life point there tends to be a change in values and goals which the individual strives for. At this time, men tend to become less instrumental and outward-oriented, experiencing a new interiority and interest in the expressive mode (Neugarten et al 1964; Gutmann1969). As Levinson et al (1978) observe, "it would not be surprising that such a shift in personality brought about a shift in the salience of occupation in an individual's life structure".

There has been little research in this area. However, Oliver (1971) in a small-scale study of middle-aged persons who had moved from large metropolitan areas to a mountain resort area, found that work held low salience for his respondents. When asked to rate the importance of various social roles performed during the past week, the emphasis was overwhelmingly in favour of family roles, followed by citizen and friendship roles, and finally the worker role.

Whether because of mid-life shift in values or because of a more general societal shift as a result of technological change from vocational to leisure orientation (and often an involuntary shift in the case of increasing unemployment), it appears that occupation holds less importance for many persons than it perhaps did in the past. Warnath (1975) urges vocational theorists to recognise

that work is not the primary focus of many person's lives and to develop a theoretical model that "does not require a fulfilling job as its core concept" (p 428). The OBS theoretical model adopts this premise as one of its central assumptions, whereas even Super's (1977) life-span model of career development still seems to place a primary focus on work.

Super's theory is also vulnerable to the criticism that it is a descriptive account of the developmantal occupational choice process and that it lacks predictive power. Carkhuff (1967) has criticized Super's theoretical formulations as being too general and too loose, in that terms are used which lack operational definition, and Super has not pointed to clear ways of assessing the self-concept. Super's theory is not presented in a testable form, and hypotheses can only be deduced from his premises. The OBS theory is presented in a testable form.

A further important but neglected area in this field has been the research interpretation of occupational choice outcomes. Most research has concentrated on the analysis of the level or field of the occupation chosen. The emphasis on the career pattern study was initiated by Super and his co-workers in the early 1950s, but career patterns have rarely been used in the analysis of occupational choice outcomes. Such career patterns will reveal information on the stability, instability, indecision and realism of the occupational choice, and a greater appreciation of the causes of such different career patterns would appear essential in expanding our knowledge of the occupational choice process. The OBS theory adopts Super's view and attempts to examine the occupational choice process in terms of career patterns rather than in terms of individual occupational choice outcomes.

3.16 Relationship between Holland's Theory and OBS Theory

Holland's theory that people seek occupational environments congruent with their personality has generated considerable research outside the UK, and according to Lackey (1975), the evidence generally supports Holland's main hypotheses. However, Thoresen and Ewart (1976) point out that more than two-thirds of the

studies supporting this theory used American college or high school students, and as yet, little effort has been made to substantiate Holland's theory in Britain.

Thoresen and Ewart (1976) have also noted that occupational choice theorists have devoted little attention to people who are past their late teens and twenties. Holland (1976) too has pointed out that "articles about mid-career crises are popular, but precious little data has been accumulated, and what we have is usually limited to small unrepresentative samples of middle-class men". Most research samples like Holland's in the occupational choice field have concentrated on sixth formers and students in tertiary education. It is argued, of course, that the concept of occupational 'choice' only exists with such groups and that the less able are occupationally 'allocated'. It may also be the case, however, that different models of 'choice' behaviour need to be constructed for different groups.

Although there is some degree of self-selection taking place between individuals and occupations, there is little agreement in the literature on the factors upon which this selection is based. There is also considerable debate as to whether the occupational choice process reflects conscious or unconscious behaviour. That is, whether an individual knows or recognises that at the time he is deciding on an occupation that this is what he is actually doing, and whether he is aware of the factors which have influenced or determined his choice; and also, whether the individual is aware of the factors which may have inhibited his choice. The traditional trait-matching approach maintains that occupational choice is essentially a conscious, problem-solving process. The psychoanalytically-oriented school would argue that occupational preferences and interests have unconscious roots whereas the developmentalists would suggest that occupational choice is largely conscious but affected by unconscious motives and feelings. Empirical evidence is limited but the unconscious determinants of our primary perceptual processes seem substantial. The OBS theory adopts the views that the determinants of most occupational

beliefs which determine our occupational choice are largely unconscious but that we are also differentially consciously aware of some occupational beliefs; that is, we are consciously more aware of the origins of some occupational beliefs than we are of others. Holland argues that people search for environments that will let them exercise their skills and abilities, express their attitudes and values, and let them take on agreeable problems and roles, and that this search is carried on in many ways at different levels of consciousness.

Holland's approach is a more sophisticated version of the trait-matching approach but it remains essentially a differential model of occupational choice. On the assumption that personality and situational factors are essentially dynamic, Holland's theory attempts to predict a person's behaviour by analysing the interaction between his personality and the characteristics of his environment, but only at one given point in time. Holland's theory has not been shown to contribute to our understanding of the occupational choice process over a period of time.

3.17 Relationship between Dawis and Lofquist's Theory and OBS Theory

Dawis and Lofquist's theory of work adjustment focuses on the interaction between work personality and work environment as a way of conceptualizing the process by which an individual adjusts to work. The theory states that in this interaction vocational abilities and vocational needs are the significant aspects of work personality; ability requirements and reinforced systems are the significant aspects of the work environment; and satisfactoriness, satisfaction and job tenure are the significant outcomes of the work personality - work environment interaction.

The theory was made operational and testable by the development of instruments to measure the theory's main concepts. For example, the Minnesota Satisfaction Questionnaire (Weiss, Dawis, England, Lofquist 1967), the Minnesota Satisfactoriness Scales (Gibson, Weiss, Dawis and Lofquist 1970); vocational needs were measured by the Minnesota Importance Questionnaire (Gay, Weiss,

Hendel, Dawis and Lofquist 1971), and vocational abilities were measured by the existing and well-developed General Aptitude Test Battery; the ability requirements of work environments were established by the Occupational Aptitude Patterns developed by the US Training and Employment Service, and Occupational Reinforcer Patterns (ORPs) were developed to measure the reinforcing properties of the work environment (Borgen, Weiss, Tinsley, Dawis and Lofquist 1968).

Dawis and Lofquist's theory draws on concepts related to learning theory in that they argue an individual's responses become associated with reinforcers in the work environment. Reinforcers are environmental conditions which help to maintain a particular response. In the theory, attitudes tend to be viewed as reflected in the measures of employment satisfaction. For example, in the work environment one may have attitudes about conditions and people at work. The theory also interprets needs as predispositions to act in the similar way that attitudes are often defined as predispositions to act.

The theory relates itself developmentally to the life stages of Ginzberg and Super in that the individual progresses through a pre-adult period in which abilities and needs are ill-defined, and the individual has little information about job requirements and job reinforcer systems. The theory also aligns itself with Super's view that the process of vocational development is essentially that of developing and implementing a self concept. In the context of the work adjustment theory, an individual seeks work situations which will correspond with his needs and abilities.

The work adjustment theory is not a theory of vocational choice but it seeks to provide a framework for predicting the outcome of vocational choice. Essentially, Dawis and Lofquist present a rather narrow-band theory. Occupational behaviour tends to be related to a rather narrow range of circumstances. The OBS theory, unlike the Dawis and Lofquist model, directs itself to explaining the occupational choice process, and the personal systems of

evaluations that individuals place on work.

3.18 Relationships of OBS Theory to Expectancy and Decision Theories

Edwards' (1954) subjective expected utility (SEU) model of behavioural decision theory deals with beliefs about the consequences of performing a given behaviour. The model measures relevant beliefs about the consequences of a given behaviour, how likely this action will lead to this outcome, and the extent to which the values of each of these probabilities linked to the attitude object are perceived as good or bad.

Rosenberg (1956) was perhaps one of the first to introduce an explicit expectancy-value model in the area of attitudes but Fishbein (1967, 1975) has given a clearer theoretical account of the relationship between beliefs to attitudes to behaviour and to choice. Fishbein argued that behavioural intentions are a function of a person's 'attitude' to the behaviour in question, and a person's 'subjective norm' about the behaviour in question. The 'subjective norm' refers to how the person thinks people important to him think he should behave. Fishbein's theory is represented by the following equation:

$$BI = AAct_{W1} + SN_{W2}$$

BI	=	behavioural intention
Aact	=	attitude to the act
SN	=	subjective norm
W1 and W2	=	the regression weights of the equation to be empirically arrived at.

Some behavioural intentions will correlate higher with the attitudes and some will correlate higher with the subjective norms. The regression equation, of course, can tell us whether a given set of behavioural intentions correlates most with attitudes or norms. Fishbein also stresses that we must measure 'attitude to the behaviour', and not attitude to the object of the behaviour.

Fishbein has also proposed theories of the structure of both attitudinal and normative variables. For the attitudinal variable, Fishbein has proposed this equation:

$$Aact = \sum B_i \; e_i$$

Aact	=	attitude to the act
B_i	=	belief about the act; that is, the probability that the act is related to some other object x_i
e_i	=	the evaluative aspect of B ; that is, the respondent's attitude towards x_i

Fishbein is restating the insight that underlied the attitude measurement system of Likert and Thurstone for example, but he presents his theory in a testable form. A set of beliefs about a given act is identified, then measured both for belief strength (B_i) and evaluative aspect (e_i). The $B_i \; e_i$ calculation is then carried out. Tuck (1976) summarises the supporting research and concluded that the correlation between Aact and $\sum B_i \; e_i$ measures is about 0.6 or over.

The subjective norm component has been represented by the following equation:

$$NB = \sum SNB : Mc$$

NB	=	generalised normative belief
SNB	=	social normative belief strengths (beliefs about what other people expect one to do)
Mc	=	motivation to comply

However, the empirical evidence is not as strong for this equation, and the role of motivation in the equation has not been established.

The salient beliefs associated with an act are operationally defined by Fishbein as the first beliefs which a respondent produces in answer to an open-ended question such as "Tell me what you

think about (the act in question)". The respondent is, therefore, considered to be his own best reporter on what beliefs are salient for him. Kaplan and Fishbein (1969) and Thomas and Tuck (1975) have found evidence to suggest that it is about the first 7 beliefs produced in response to the open-ended question above which are most influential in forming attitudes.

Although Fishbein's theory does not explicitly consider personality, situational or demographic variables, it is argued that all other variables manifest themselves through the 2 variables outlined in the theory. Fishbein claims that no other variables have been identified which can help to explain more of the variance in the choice process than attitudes and subjective norms alone.

Another problem to which Fishbein's theory is vulnerable, concerns the difficulty in defining 'levels of specificity'. Behavioural intentions, attitudes and subjective norms need to refer as specifically as possible to a behavioural act if the theory is expected to have predictive usefulness.

Sheth (1973, 1974) has also criticised Fishbein's theory for not taking into account the importance of beliefs. Fishbein considers the salient beliefs to be those that are spontaneously emitted first but the theory does not attempt to weight these beliefs for importance in influencing the decision. Fishbein, however, does not accept that the evaluative measure should be substituted by an importance measure, and he maintains that the first 7 or so beliefs that occur to a man at any given moment about the ends of his action are all important for his attitude to that action.

Mitchell and Beach's (1976) review of the literature on expectancy theory indicates that this theory has had only limited success in predicting occupational choice. Herriot and Ecob (1979) argue that certain methodological problems are responsible for this limited success. It seems that much research (eg Mitchell and Knudson 1973) has attempted to relate general attitudes towards an occupation to specific occupational behaviour. Fishbein and Ajzen (1975, 1977) do argue that the occupational attitude

(defined as the sum of the products of belief evaluations) and the occupational behaviour will both have to specifically relate to the specific application for a particular job. Consequently, the Fishbein model has a rather limited usefulness in predicting occupational choice. Herriot and Ecob (1979) also make clear that much research in this area with the exception of Galbraith and Cummings (1967) and Mitchell and Nebecker (1973) has ignored negative belief evaluations. Muchinsky and Taylor (1976) also found out that negative evaluations and positive evaluations do not differ in their predictive power.

Finally, Mitchell (1974) rightly points out that much research is erroneously based on the assumption that all beliefs carry an equal weight. Lawler and Porter (1967) and Mitchell and Pollard (1973) have demonstrated that the ability to predict work performance is increased by calculating multiple regression weights for each product. Herriot and Ecob (1979) argue that the beliefs with the greatest weights will also have the greatest variability across alternatives. In other words, the difference between the highest and lowest value of a belief when applied to the alternatives being assessed will be greatest for the most heavily weighted or salient belief.

In summary, therefore, the following permutations of expectancy theory have been proferred. Vroom (1964) described occupational choice behaviour as a function of beliefs about the outcome and the evaluation of these beliefs. Fishbein and Ajzen's (1975) view incorporates belief evaluations and subjective norms with all elements being equally weighted. Elements added to these equations have included an element for the expectation of the attainability of each alternative, weighting of elements derived either from the standard multiple regression or from the degree of variability over the other alternatives. Herriot and Ecob (1979) tested all these modifications of the expectancy value theory by administering a questionnaire to two relatively small groups of electrical engineering students ($m = 66$; $n = 58$). Comparisons were then made between the predictive powers of the different equations. The results were rather equivocal in that different models were the

best predictors for different types of job. Vroom's model seemed in general a better predictor than other models. The addition of subjective norms, following Fishbein and Ajzen led to little improvement. In two out of the 9 experimental cases calculating individual regression weights appeared to improve predictive power. The addition of expectations regarding the attainability of various job-types also appeared to add to predictive power. Herriot and Ecob (1979) concluded that perhaps we should employ different models to explain different types of choice, and even perhaps that different cognitive processes may be used in making different occupational choice decisions. Herriot, Ecob and Hutchison (1980) produced further evidence to support the finding that there was no single model which was the best predictor for alternative types of jobs.

The OBS theory has some roots in expectancy theory but also incorporates data on the occupational personality type as an important explanatory variable and beliefs are interpreted in a macro level context, as reflecting the individual's orientation to work in the context of other human activities. Finally, the occupational beliefs are not equally weighted.

3.19 The Occupational Belief Systems Theory

The occupational belief system (OBS) theory of occupational choice is based on the assumptions that choosing an occupation is a purposive affair, and not a random phenomenon, taking place over a period of time, and that it is a compromise between occupational beliefs, occupational persona constraints and socio-economic constraints. The following is a summary of the main propositions of the Occupational Beliefs System theoretical model:

1. The Occupational System of Beliefs is a central mechanism containing beliefs which represent all that a person considers true or likely about his occupational world, and disbeliefs which represent all that a person considers false or unlikely about his occupational world.

2. All beliefs about occupations differ in their importance to

each individual, but they provide structure and meaning to the individual's occupational world, and in turn, determine the individual's occupational behaviour.

3. All beliefs about occupations are either predominantly oriented in the past, present or future.

4. The nature of most individual's work role is not static.

5. Each individual's occupational participation can most accurately be represented by the analysis of career patterns over periods of time, which take account of the kind, sequence and duration of employment. The first job attainment is not the end of the process of choice.

6. Occupational choice behaviour is a compromise between demographic characteristics, occupational beliefs, occupational persona constraints and socio-economic constraints.

7. This model of occupational choice applies with equal relevance to men and women, and individuals of all ages.

8. It is a central assumption of the theory that occupational choice is not the primary focus of many individual's lives, and that work is perceived by many people as just another activity in the context of all other human activities; and that work serves a variety of functions for different people.

9. The determinants of most occupational beliefs are largely unconscious, but that we usually are consciously aware of some of the origins of some occupational beliefs.

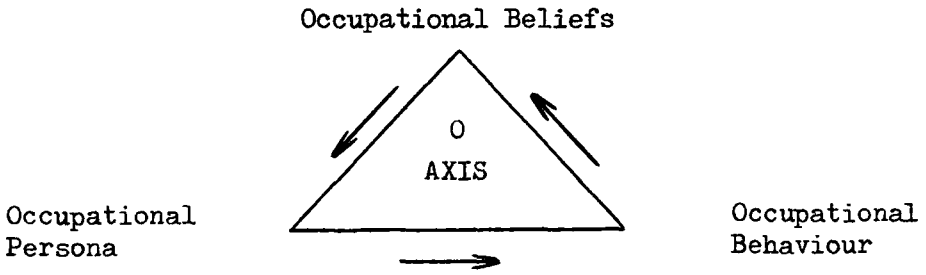
10. Occupational development is experimental in nature, necessitating trial-exploratory behaviour.

The theory propounds that occupational behaviour is a function of both occupational beliefs and occupational persona traits where beliefs and traits can be summated and subtracted to provide an

integrated concept. However, occupational beliefs can also be a function of occupational behaviour in that occupational beliefs will tend to be continually adjusted as the individual interacts with the ever-changing work situation. That is, the precise beliefs about work at any given time is considered to be a function of the outcome of the individual's various predictions about his world. In a similar way, the occupational persona traits (ie manifested work personality traits) will also be a function of the ever-changing work situation, and any particular beliefs about work at any given time.

The '3-sided wheel' model presented below is useful as a representation of what happens in real life in that any force acting on any one of the corners will be transmitted to the wheel as a whole.

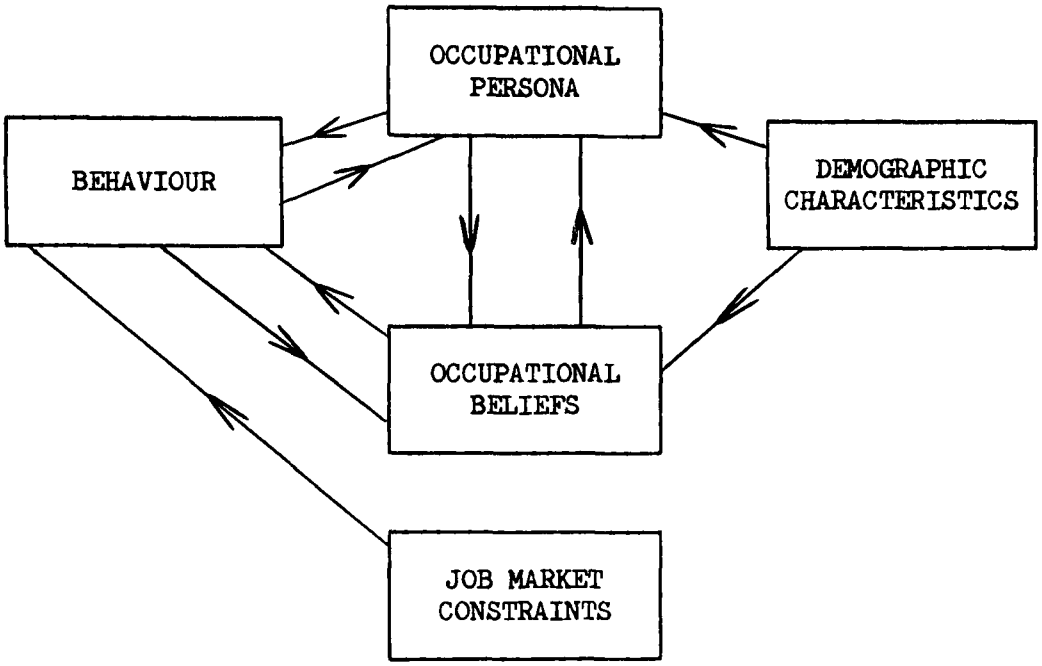
Three-Sided Wheel Model of Occupational Behaviour:



In terms of occupational choice, the model would be used as follows: All possible occupations with a reasonable chance of attainment are considered to be the alternative behavioural actions. The individual then assesses or evaluates his or her beliefs about work in general which will be reciprocally influenced by his or her occupational personality type, and then he attempts to match this profile with a work situation which best approximates his occupational beliefs or orientation to work.

The '3-Sided Wheel Model of Occupational Behaviour' is better equipped to explain behaviour at the micro level of analysis, particularly when the dependent behaviour variable is interpreted as a specific occupational preference at one point-in-time. The more comprehensive model to explain behaviour at the macro level

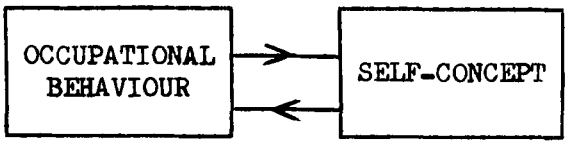
of analysis, where occupational choice behaviour is interpreted as the developmental career pattern of occupational behaviour, is stated below. The variables of 'demographic characteristics' and 'job market constraints' are added to the 3-sided wheel model.



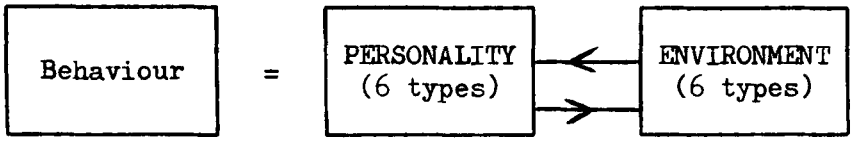
The following table attempts to summarize and highlight the main differences of the major theoretical approaches discussed by representing them schematically. It is assumed that all approaches recognize the importance of demographic characteristics and job market constraints. Furthermore, it is also recognized that the different theoretical approaches do have different aims in relation to the occupational choice process. For example, Holland and Dawis and Lofquist present prescriptive models, and the approaches of Super and Fishbein are more descriptive of the occupational choice process. At the present stage of its development, the author's model is descriptive of the occupational choice process, but the satisfactory development of instruments to measure the model's constituent elements will give the model the capacity to be prescriptive.

Summary Table

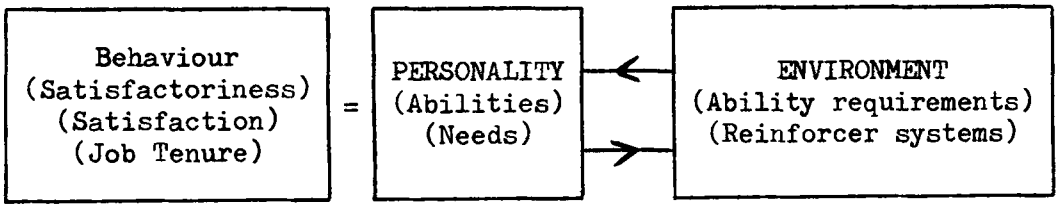
SUPER



HOLLAND



DAWIS AND LOFQUIST



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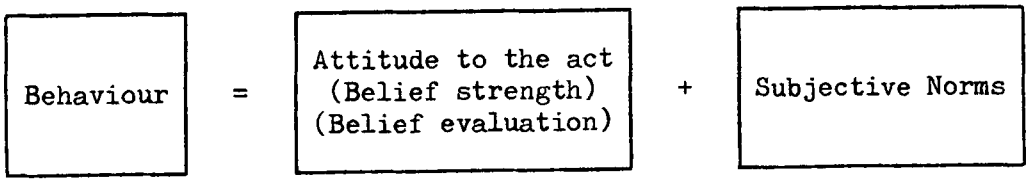

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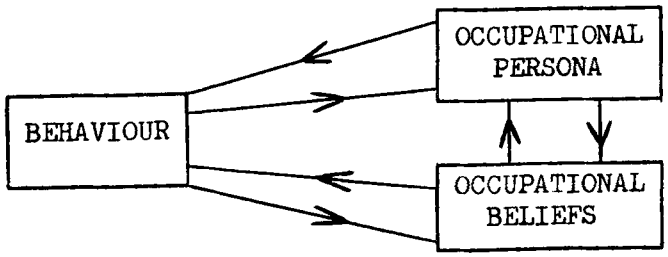


4. Overview of the Work Orientation Concept

4.1 The concept work orientation is now introduced in the final part of this chapter to link the previous discussions on belief systems and occupational choice theory. It has already been argued that the analysis of cognitive structures, like belief systems, has considerable potential in explaining the occupational choice process. However, occupational choice theory has developed largely independently of the theory of belief systems. Other concepts like 'motivation', 'attitude', 'value', 'wants' and 'needs' also have importance in how an individual views his work situation, or any other situation. However, it may be questioned as to what extent distinctions between 'motivations', 'attitudes', 'values', 'wants' and 'needs' are conceptually and operationally viable. The term work orientation is introduced to avoid the need to make such conceptual distinctions. An individual may have an affiliative, economic or socially obligated orientation to work, and any or all of his needs might be involved in one such orientation to work. The work orientation concept also incorporates a motivational inference, whereas an individual's expectation of having a dominant need satisfied may be low and thus have little motivational inference. The work orientation concept is conceptualized as representing all that a person believes to be true or likely about his occupational world and all that he disbelieves to be true or likely about his occupational world. In other words, an individual's work orientation reflects his occupational system of beliefs (author's term; see section 2.11). The 'belief system', as has been argued in section 2.11, is an organization of verbal and non-verbal, implicit and explicit beliefs, and thus incorporates all an individual's motivations, attitudes, values, wants, needs and so on.

4.2 Very little research work has been reported in the literature on the concept of work-orientation. Indeed, it is less than two decades ago since the concept of orientation to work first appeared in the literature. The concept has been explicitly used by Goldthorpe (1968a), Daniel (1969), Brown (1971) and Taylor

(1975), and more implicitly by Trahair (1970). However, these writings have tended to concentrate on analysing the work situations and external influences on employee behaviour, whether an individual's orientation to work is determined by external influences, whether an orientation to work is constant over time and as a classification system for reflecting occupational choice explanations. It is very conspicuous that much of the literature has tended to ignore the theoretical development of the work orientation concept. Bennett (1974, 1978) is the exception and he has written extensively about the theoretical aspects of the work orientation phenomenon.

In addition to the lack of theoretical development in this field, there has been no agreement on an operational definition of the work orientation concept. In 1969, Childs defined orientation to work as "the ordered expectations and goals an individual has regarding the work situation". However, the implication of hierarchial ordering has already been empirically challenged by Alderfer (1969) and Daniel (1972) as well as being conceptually unattractive. Daniel (1969) defined orientation to work as "the actor's definition of the work situation in terms of the expectations and needs he brings to it as a result of his socialization outside the working environment". This definition is not particularly acceptable as it states what the concept is and how it is caused without really explaining it.

Goldthorpe has perhaps been the person most instrumental in introducing the work orientation concept into the occupational psychology literature, but he has also been guilty of not defining the concept adequately. Goldthorpe (1966, p 240) refers to "an ordering of wants and expectations relative to work" but he does not explain how such wants and expectations form into orientations, and he often seems to use the work orientation concept as a synonym for work attitudes. Parker (1967) supports this view even more clearly by the following statement:

"Work attitudes describe the general approach that people take to their work as a result of having certain values. In this

context the term 'orientation' means much the same as attitude, that is, a readiness to respond to aspects of work in terms of the values held." (p 150)

However, the attitudinal concept is seen here as inadequate because the work orientation concept has a motivational element as well as a "readiness to respond". Fox (1971) discusses orientations to work at some length and associates the concept with what individuals expect and want from work. Sheldrake (1971) and Wedderburn and Crompton (1972) use the term in the same way as Goldthorpe but again fail to distinguish clearly between "expectations", "orientations" and "attitudes".

In Drever's (1964) "A Dictionary of Psychology", the concept of orientation is defined as an "awareness of one's spatial, temporal, practical or circumstantial situation, with reference particularly to 'mental orientation' in various connections. Bennett (1975), uses this definition as a base, includes the ideas of 'wants' and 'expectations' from the previous writings and defines orientation in the following way:

"Orientation is a measure of reflection of how an individual views a particular situation in terms of what he <u>desires</u> from it and the extent to which he <u>expects</u> these desires to be achieved in it."

Bennett's definition as stated above is largely acceptable to this author except he would replace the words "how an individual views a particular situation" with the words "the beliefs an individual holds about work". These beliefs reflect personal qualities, needs, values, attitudes, abilities and motivational factors. An individual's work orientation, therefore, represents the function that an individual wants work to play in his life and the extent to which work successfully achieves that function. The author's formal definition now reads as follows:

"Work Orientation is a measure of reflection of the beliefs an individual holds about work in terms of what he <u>desires</u> from it, and the extent to which he <u>expects</u> these desires to be achieved in it."

It is also argued here that an individual's work orientation is a dynamic state. An individual's work orientation is continually undergoing change as the individual interacts with the ever-changing objects in his environment. The precise work orientation at any given point in time is considered to be a function of the outcome of the individual's various predictions about his world. For example, an outcome will either validate, invalidate the beliefs or neither confirm nor disconfirm the predictions. If beliefs are invalidated, an individual's particular work orientation is not likely to be maintained.

Work orientation is also considered by the author to be a multi-dimensional concept. Different forms of orientation to work exist, and different orientations will be more or less central to each individual at any given point in time. It is also contended that different work orientations are not hierarchical in character (ie a particular work orientation does not always necessarily precede another form of work orientation), and this contention will be empirically examined in the present study.

4.3 A review of the research on orientations to work has to be interpreted with caution because, as has already been outlined, different research workers have tended to use differing definitions to define the concept. In other words, there is considerable scope for any research worker to reject previous findings without rejecting the concept.

The interest and argument about the work orientation concept evolved from Goldthorpe's original work. Goldthorpe et al (1968a) stated that: "In terms of social values, the transition from the traditional to the new working class may be seen as a change from 'solidaristic collectivism' towards what we would term a more 'instrumental' orientation - to work, trade unionism and politics alike. And in terms of social relationships, a parallel movement may be suggested: away from 'communal sociability' towards a more privatized form of social existence, in which the economic advancement of the individual and his family becomes of greater

importance than membership in a closely knit local community".

Goldthorpe et al's (1968b) research findings indicate that mobile workers are likely to be more instrumental than non-mobile workers, and that manual workers who experience 'relative deprivation' and 'status incongruency' are more likely to adopt an economic view of work. It was also concluded that younger workers are likely to be more economically-orientated than older workers due to the pressures of their stage in the life cycle.

The implications of Goldthorpe's findings are that work orientations are products of conditions independent of job context, and that individuals approach work with a developed system of beliefs about work. An important conclusion of Goldthorpe's (1968a) is that work experience does not influence one's orientation to work. Goldthorpe et al (1968a) argue that as the importance of working conditions are minimized, the individual structures his belief system towards the realization of economic gain. In the words of Goldthorpe (1968a): "The primary meaning of work is as a means to an end, or ends, external to the work situation; that is, work is regarded as a means of acquiring the income necessary to support a valued way of life of which work itself is not an integral part".

Daniel (1969) argued strongly against Goldthorpe's view and contended that one's orientation to work is heavily influenced by the work situation and work experience, and he challenged Goldthorpe's assumptions that work orientations are stable over time and stable in different contexts. Goldthorpe's view was that occupational choice, occupational behaviour and reasons for leaving jobs are all determined by the satisfaction or dissatisfaction with money. Daniel (1973) found this view unacceptable and contended that determinants of occupational choice, occupational behaviour and reasons for leaving jobs are all likely to be different.

Very little other research on orientations to work has been reported in the literature, and this seems to be a consequence

of the limited theoretical development in the field. Fringe areas like, for example, research into extrinsic/intrinsic work values and research into job involvement have been well reported but, apart from Goldthorpe, few have been directly concerned with the concept of orientation to work. Sheldrake (1971) examined the orientation to work of computer programmers and found that programmers tended to manifest either a technical or commercial orientation and that these tended to be related to different kinds of personal and organizational factors like age, education, perception of work role and organizational perspective. Marion and Trieb (1969) looked at the work orientation of American supermarket employees and found that orientation was related to personal factors, like age, sex and education, as well as organizational factors.

More recently Bennett (1974, 1975, 1978) has written extensively about the theoretical and empirical aspects of the orientation to work phenomenon. Bennett's research has provided support for the view that work orientation is influenced by both personal and organisational factors, as well as external social factors. Orientation to work seemed to be affected by age, income, wife's working status, membership of clubs, and the nature of the job.

Taylor (1979) examined the career orientations of engineering students and found, not surprisingly, that social and historical factors, like age, father's occupation and previous experience had strong influences on career orientations. Four types of career orientations were a priori identified by Taylor, and these orientations referred to the importance of the ambitions of: (1) managerial or organizational advancement, (2) technical accomplishments, (3) monetary rewards, and (4) work autonomy. It should also be noted here that these orientations appear to assume that work is of central importance to all individuals. However, Taylor argued that his findings implied a causal relationship between his career orientations and job choices. For example, his findings revealed that engineering students with a 'strong managerial' orientation tended to select non-engineering jobs, and those with a 'strong technical' orientation tended to choose design

work. Also the 'technical' and 'managerial' orientations were significantly related to a number of 'demographic' characteristics like socio-economic group and exposure to an engineering environment. Therefore, Taylor suggests that career orientations may have a direct, causal influence over job choice, and the concept of career orientation represents the compromise between job market constraints and certain demographic characteristics. Thus Taylor attempts to incorporate the whole process of career selection throughout a person's life into a single analytical framework. Taylor's work is an interesting contribution to the field but like most other researchers in this area he has ignored the theoretical development of the orientation concept.

More recently MacKinnon (1980) has also provided data which confirms that factors outwith the work situation influence orientations towards work. For example, the size of the community of birth seems to have an independent effect. Contrary to the Goldthorpe argument of mobile workers seeking high wages and being more instrumentally orientated, MacKinnon (1980) locates a group of workers from rural and semi-rural origins, relatively uneducated with low pay expectations. They also tend to be socially isolated and consequently value the social exchange at work. Therefore, MacKinnon (1980) argues that work instrumentalism is influenced by work conditions, and it is also a component of work alienation. In contrast, Goldthorpe views work instrumentalism as a prior orientation, independent of job conditions.

Finally, Russell (1980) has provided data to support the dynamic nature of the orientation to work phenomenon, and he concludes that Goldthorpe's view which advocates prior orientation to work as the starting point for analysis oversimplifies the relationship between workers' attitudes and work values. Russell (1980) also contends that while 'work orientation' may be a useful concept for understanding organizational behaviour, the 'locus of control' perspective should also be examined in any analysis of organizational behaviour. In other words, it would be helpful to determine those individuals high in feelings of control of both their

behaviour and the environment, and those individuals low in feelings of control of both their behaviour and the environment. Russell (1980) has developed an adaptation-activation model of work value systems which advances the locus of control as a crucial independent variable. In the words of Russell (1980): "Situational responses become understandable in terms of the degree to which the participant in the social field perceives that goal attainment follows from, or is contingent upon, his own behaviour and abilities (internal control reinforcement expectancies) or, conversely, feels that it is controlled by forces outside of himself and may occur independently of his own actions (external control reinforcement expectancies)". In contrast to Bennett's (1974) arguments, Russell (1980) and the author would not contend that orientations to work have a "reasonably stable, externally determined component". (Bennett (1974) p 157); and Russell (1980) argues that the stability of work orientation cannot be meaningfully discussed without reference to the mediating influence of personal orientation and the degrees of resistance and unresistance to the social system experienced. However, this approach to explain organizational behaviour in terms of the social construction of work value systems lacks empirical support at present. Russell (1980) also seems to be offering a sociological explanation of organizational behaviour, and his views do not contribute meaningfully to the theoretical development of the orientation to work phenomenon.

4.4 It has already been stated that the theoretical development of the orientation to work concept has been given very little consideration by the researchers in this field. Many researchers have been content to explain orientations to work in terms of rather generalized motivational concepts. Almost all theories of motivation make some assumptions about individual needs and drives and they have been classified and titled in a number of ways. For example, 'satisfaction' theories assume that a satisfied worker is a productive worker. This approach assumes that by paying attention to working conditions, pay, fringe benefits and so on, production will be increased and absenteeism and labour turnover reduced. This

approach treatsall employees in the same way and there is little empirical evidence to support the basic assumption.

The incentive theory approach originally proposed by theorists like Taylor (1911) is based on the principle of reinforcement. That is, individuals will increase their productivity to obtain a desired reward, and most studies have concentrated on using money as the motivator (eg Goldthorpe's notion of instrumental orientation). This approach has been shown to have an effect if the reward is desired and can be clearly attributed to a particular performance which can be unambiguously measured.

The intrinsic theory approach suggests that man will gain sufficient reward and satisfaction from a job if he is given a meaningful job and allowed to develop his own ways of completing the job. This approach is based on some general assumptions about human needs. For example, Maslow (1954) classified human needs into five types - self-actualizationneeds, esteem needs, belonging and love needs, safety needs and physiological needs - and argued that needs are only motivators when they are unsatisfied and that they develop importance in a hierarchical fashion. Alderfer (1969) presented an alternative to Maslow's hierarchy and a three-dimensional classification of needs which he described as existence, relatedness and growth. The Work Adjustment Theory of Dawis and Lofquist has listed a greater number of needs including economic reward,achievement, authority, recognition, independence, variety, use of abilities, creativity and self-expression, social status, security, activity, and responsibility versus dependency.

However, the introduction of the work orientation concept offers an alternative conceptual approach for understanding work motivation. The work orientation approach makes an assumption about Man which is parallel to what Schein (1965) calls "complex man". Man has many motives which change over time, and from situation to situation. Bennett (1974, 1975, 1978) has involved himself more than most writers in the theoretical development of the orientation to work concept. He argues that a person's work

orientation is oriented towards people, things or himself. He adopts a three-dimensional classification system - (1) Instrumental, which is a desire for economic and material gain; (2) Relational, which is a desire for social needs and interpersonal relationships, and (3) Personal, which is a desire for self-development and an opportunity to use one's skills.

Bennett uses a systems model of human behaviour to illustrate the process involved with the concept of work orientation. Bennett adopts a simple input-process-output idea with situational factors (eg job, home, economic demands) and demographic factors (eg education, age, sex) being the inputs, and different types of work orientation being the outputs. Bennett's three proposed orientations were determined rather arbitrarily, and he also suggests that it may be inappropriate to conceive of the work orientations as hierarchical or mutually exclusive.

Bennett's work, however, is not very helpful in the attempt to define the 'process' element, and he resorts to accounting for the process in terms of a "black box" approach on the basis that our knowledge of physiological, neurological and psychological relations and concepts is not adequate enough to enable such a definition to be attempted. However, Bennett does conceptualize these processes as containing the values, needs and emotions which modify the situational and demographic variables and thus effect the work orientation.

Finally, Taylor (1975) uses the work orientation concept as a means for classifying the different theoretical explanations of occupational choice. Taylor argues that by classifying theories from the chooser's point of view there appear to be three major types of explanation. The categories are named as the actualizing orientation, the calculating orientation and the traditional orientation. The actualization category refers to the theories of Roe and Super who argue that individuals enter into jobsto implement their self-concepts, satisfy their needs and so on. The calculation category incorporates expectancy and decision theory models

which propose that individuals work out the costs and benefits of possible alternatives. The traditional category refers to sociological and economic explanations of occupational choice which suggest that individuals 'choose' jobs because of a combination of several socio-economic factors.

Taylor's (1975) empirical evidence, however, for the existence of these categories tends to be rather sparse. In a study of 1300 school leavers by Veness (1962), Taylor argues that his categorization was reflected in the reasons people offered for their choice of work. Veness (1962), in fact, using Riesman's (1950) terminology, categorized the responses according to their "inner direction", "other direction", and "tradition direction". Taylor argues that Veness's (1962) categories run parallel to his own. Taylor (1975) then proceeded to develop an instrument to measure the different ways individuals might be related to their work, which he rather opaquely described as a "Work Quiz".

4.5 Development of the Occupational Beliefs Index (OBI)

The OBI was developed to measure an individual's occupational belief system which in turn reflects the individual's orientation to work. Consequently, it seemed appropriate to the author to review the literature to examine previous attempts to measure both belief systems and orientations to work. However, different researchers have diverged so much in their interpretation of both concepts that comparisons between different approaches becomes less than meaningful.

Several researchers have differed in their theoretical interpretation of the function of belief systems. Some theorists view the content and complexity of a belief system as an enduring personal characteristic which mediates a wide range of behaviour (eg Bieri et al, 1966; Harvey et al, 1961; Rokeach, 1960; Schroder et al, 1967; Witken et al, 1962) whilst for others it is a dimension of very limited generality (Crockett, 1965; Scott, 1962a).

Most attempts to develop instruments to measure beliefs have

sought to represent a system which represents a framework for understanding the individual's confrontation with his world. Harvey has developed a semi-projective sentence completion test called the "This - I - Believe" test (TIB) to measure the concreteness - abstractness of a person's belief system. Harvey identifies persons at 4 points along this dimension (not just extremes) and persons are distinguished by 'levels of cognitive functioning', content of central beliefs, and according to their developmental training. The scoring and interpretation of this test is necessarily somewhat subjective.

Rokeach (1960) assesses the openness - closedness of a person's belief system using a summated scale, the Dogmatism-Scale or D-Scale. This is a 40-item questionnaire to which the subject responds on a 6-point scale from strongly agree to strongly disagree with the item presented. Rokeach determines criteria to classify persons as closed or open-minded, and deductively constructs the questionnaire on the basis of this criteria. However, Alter & White (1966) have found that the norms for the D-Scale vary subculturally, and argue that the definition of the open or closed-mind is contingent on the distribution of scores in the sample being investigated. This, of course, is a rather arbitrary procedure. Researchers usually avoid Rokeach's problem by using an extreme-groups approach by selecting the top 10-15% and bottom 10-15% of the distribution of scores from the sample.

Scott (1963b) similarly developed a measure of cognitive complexity entitled the Groups of Nations Test (GNT). Scott realised that cognitive structures were difficult to assess without introspective data, and he aimed at not putting too much burden on the average person's introspective capacity. Scott's task was to ask the individual to name the nations that he regards as important in world affairs, and then the researcher would subjectively analyse this data in terms of cognitive structure variables like unity, organisation, differentiation, integration, relatedness etc.

Similar attempts at subjectively evaluating cognitive structures

or belief systems have included Tuckman's (1966) Interpersonal-Topical-Inventory, and the Schroder (1967) Paragraph Completion Test. Kelly's (1955) Repertory Grid Test has also successfully been used to evaluate cognitive structure. Other researchers have more simply only required subjects to write essays or to work with objects, and then the researcher would subjectively evaluate in terms of important structural characteristics ie the characteristics which the individual habitually uses. It is clear that these approaches, although differing in content, all utilise a projective or semi-projective method to assess cognitive or belief systems. Very limited attempts have been made to develop objective measures of belief systems.

Bennett (1975) is the only major researcher who has set out to develop measures of orientations to work. The other major research studies have concentrated on obtaining data from structured interview questions. Bennett (1975) experimented with four different self-completion measures and they all attempted to classify individuals according to their instrumental, personal or relational orientation to work.

Bennett (1978) described the four experimental approaches in the following way:

1. Job Descriptions: Descriptions were written of three jobs which had certain, but not all, elements in common, but varied as to the emphasis given to the required predominant orientation within the job. Respondents were asked to choose one of three jobs.

2. Paired Comparison Items: A number of statements were prepared reflecting in different ways each of the three types of orientation and two per type eventually used in pairs with each other. Respondents were asked to choose the preferred statement from each of 12 pairs.

3. Rating Scales: In order to differentiate between the 'desire' and the 'expectation' components explicit in Bennett's definition of orientation, two sets of rating scales were designed

from which a comparitive 'score' of orientation was achieved. The 'desire' measure comprised fifteen five-point scales: the 'expectation' measure comprised nine five-point scales - both covering equally Bennett's three classes of orientation.

4. Semantic Differential: A number of adjective pairs, describing or thought to describe Bennett's three classes, were designed and pre-tested by asking judges knowledgeable of the classes to rate each one. Twenty-three scales resulted.

Bennett's (1975) results did not clearly indicate which measures were the most useful. However, on the basis of a series of inter-measure comparisons, Bennett concluded that the Semantic Differential Measure was the least useful, and the Rating Scales had the greatest potential to measure differences in orientation followed by the Paired Comparison Measure.

The format adopted by the author to evaluate occupational beliefs is based on a direct, self-report technique rather than based on inventoried items designed to measure a wide range of belief variables or based on more traditional projective methods of assessing belief systems. Many researchers have already concluded that self-report information is a better predictor of behaviour than more indirect methods. Among others, Whitney (1969) concluded that a person's expressed occupational choice "predicts his future employment as well as interest inventories or combinations of personality and background characteristics." Richards (1970) also concluded that it is more accurate to a schoolchild's self-prediction to forecast his choice of major occupational field than multiple predictive equations based on a wide range of aptitude and interest variables. In a similar way, the author makes the assumption that it will be more accurate to assess beliefs about work by directly asking individuals. There are, of course, difficulties involved in the measurement of orientations to work by any single approach. However, it is clear that in-depth interviews was not a practical alternative in this study, and because work orientations are being conceptualized as a cognitive phenomenon it would not be

appropriate to adopt an approach which relied on inferences from occupational behaviour. Therefore, it does appear that the use of the self-report technique appears to be the most promising approach.

The procedure in constructing the Occupational Beliefs Index was essentially deductive from the previously described theoretical formulations of the occupational system of beliefs. The belief-disbelief dimension will be represented by statements designed to measure specific beliefs which are considered by the author to be significant in reflecting an individual's desires and expectations from work (ie reflecting an individual's work orientation). No specific items were constructed for the central-peripheral dimension of the occupational system of beliefs. Individuals were asked to respond to the OBI items by a Likert-Scale type response - (a) strongly agree; (b) agree; (c) undecided; (d) disagree; (e) strongly disagree. It is assumed that if a person strongly agrees with a statement, it indicates that a particular belief is central to his identity, and if he strongly disagrees with a statement, it indicates that the particular belief is peripheral to his identity. The time-perspective dimension of the occupational system of beliefs will be represented by an additional item which determines the extent to which an individual occupationally fixates on the past, present or future without appreciating the continuity that exists between them.

The first stage in the strategy for constructing the OBI was to identify what specific occupational beliefs should represent the belief-disbelief dimension of the author's occupational belief systems model. The author's objective in this respect was to explore the research literature and identify all the different ways an individual may be orientated to his work in terms of what he desires from it in the context of his other human activities.

Morse and Weiss (1955), for example, interviewed 401 men in their investigation on what work means to the individual. They found that (a) work is more than a means to an end for the vast majority of employed men; (b) that a man does not have to be at the age of

retirement or to be immediately threatened by unemployment to be able to imagine what not working would mean to him, and (c) that working serves other functions than an economic one for men in both middle-class and working-class occupations, but that the non-monetary functions served by working are somewhat different in these 2 broad classifications of occupations. Donald and Havighurst (1959) asked individuals what meaning work and their favourite leisure activity had for them. It was found that most of the meanings ascribed to leisure were also ascribed to work ie the chance to achieve something, to be able to serve or to benefit society, as a means of passing the time, of making contact with friends, and as a source of interest, status and self-respect. Four per cent gave "financial return" as the meaning of their favourite leisure activity compared with 12 per cent for whom work was only meaningful as money earned. The work illustrated the variation in people's concepts of work but it did not indicate how the meanings of work compare for a particular person.

Hayes (1971) reviewed research in this field and identified a number of other common work functions - social contact, social position, security, intrinsic work satisfaction, patterning of time and self-realisation. Williams, Morea and Ives (1975) introduced another function described as "power" as a result of asking a sample to generate 10 statements in answer to the question "what does work mean to me?"

It was very clear, therefore, that several researchers had identified an economic orientation to work. Many theorists, of course, take an economic view of man in that he works only for economic gain, although it may be argued that man is seldom orientated to his work by a single motive; and secondly, we must know how money is spent before we can know how he is motivated economically. However, other writers, like Brown (1954) argue that money is not an important reason for being orientated to work. Perhaps this view receives some support from Viteles (1954) review of surveys in which workers were asked which factors were most important in making a job good or bad - 'pay' commonly came sixth or seventh

after 'security', 'co-workers', 'interesting work', 'welfare arrangements', etc. Morse and Weiss (1955) also found that in their survey 60% would continue to work after receiving a large inheritance, although some people will no doubt have wished to give socially desirable answers. However, another interesting finding came from a survey by Centers and Cantril (1946) in the USA. They found that the most lowly paid workers would be satisfied with an increase in income of 162%, those in the middle ranges wanted about 60% and the most highly paid workers wanted over 100%, with an overall average increase of 86%. These findings fail to indicate a cut-off point at which people cease to want more money. The instrumental value of the money is not clear but money itself may well be perceived as an index of success, as well as a means to new and varied purchases.

The affiliative work orientation has also been identified by several researchers. The affiliative or social contact orientation to work refers to the extent to which an individual works for companionship and friendship. Argyle (1969) found that these people prefer to spend considerable time with others, tend to be warm and affectionate, try to establish intimate relationships, prefer to be popular rather than a leader, and are more concerned with group social interaction than their actual job. Morse and Weiss (1955) found that of 31% of people who said that they would still work if it was not financially necessary said that this was because of their relationships with people at work. Most people tend to have an affiliative orientation to work although the strength of the orientation will, of course, vary between individuals.

There is also evidence for the existence of a socially esteemed work orientation. The social position or a socially esteemed orientation to work refers to the extent to which the individual works for the status and prestige of his occupational position. Work can obviously give status and Herzberg (1959) found that recognition was often mentioned as the reason for occasions of high job satisfaction. Bakke (1940) also found that when people are unemployed they feel a great loss of status, and think that they

are no longer respected. A man's internal working position often tends to be rather obscure, and it is often inferred from his apparent income or life style.

Some individuals also appear to work to realise their goals in life. This is a self-fulfilling or self-realising orientation to work. Maslow (1954) emphasised this work function which he referred to as 'self-actualisiation'. Maslow referred to it as a need for growth, for continual self-development and a realising of potentialities. Vroom (1964) more modestly suggested that people are motivated to make use of their abilities. Several experiments seem to suggest that if people are led to believe that a task requires abilities which they think they possess they will work harder at it. However, it is perhaps reasonable to assume that individuals in high-status jobs are more likely to have a self-fulfilling work-orientation than individuals in low-status jobs.

Donald and Havighurst (1959) identified an achievement work-orientation. Achievement work-orientation is a different work function from the self-fulfilling work-orientation. McLelland (1953) postulated that strength of the need to achieve is a basic dimension of personality. Some individuals are stimulated and aroused by challenges and targets, and such individuals tend to be more ambitious and hard-working than others. However, some work situations do not provide opportunities for achievement, and such needs may need to be displaced in non-work situations.

Work also seemsto play a major function in establishing an individual's self-identity. Mulford and Salisbury (1964) confirm that occupation is one of the most frequent kinds of answer when individuals are asked to describe who they are. This is clearly true for many higher status jobs and craftsmen where the differentiation between work and leisure may become rather blurred <u>eg</u> authors, artists, physicians. However, it also seems true of manual workers in physically demanding jobs. There would appear to be a satisfaction in having done jobs that were physically hard to do, and a certain retrospective pleasure in having coped

with hard, and even unpleasant, work. It contributes to the self-image of a worker who does "man's work".

Williams, Morea and Ives (1975) introduced another work function described as "power". This power work-orientation refers to the extent to which the individual works for the satisfaction of exercising authority and shaping other people's behaviour. However, power may tend to be not admitted as a work function for many individuals because it may be felt to be socially unacceptable to obtain pleasure in exercising power. In this context, it becomes difficult to distinguish between personal orientations to work, and culturally approved orientations to work. However, Kuhn and McPartland (1954) asked students to generate 10 statements in response to the question "What does work mean to them?" and some statements which remained unclassified, have been interpreted by Williams, Morea and Ives (1975) as referring to power.

In the review of Hayes (1971) evidence was also found for a security work orientation. The security work-orientation refers to the extent to which the individual works to create a stable life pattern or to provide his life with a necessary routine. This orientation also refers to the dependency some individuals have for other more powerful figures to organise their life for them with a certain structure. Such individuals will not necessarily not want to be leaders. Leaders also can have a dependency on the work organisation to provide their life with a necessary structure.

Up to this stage the evidence seemed to support the identification of 8 different kinds of work-orientation - economic, affiliative, socially esteemed, self-fulfilling, achievement, self-identity and power. However, the author considered that there was an 'a priori' argument for the identification of four other kinds of work-orientation - socially obligated, altruistic, existential and political.

Firstly, it seemed to the author that many individuals may work

out of a sense of social obligation or a sense of responsibility to the community. A man's sense of responsibility appears to be dependent on his susceptibility to a variety of group expectations. On a macro-level, an individual may be susceptible to the "man should work" sterotype portrayed by education, the media, the government, the church and the trade unions. On a micro-level, the man has to respond to the expectations of his family, his neighbours, his friends and any other immediate associates in his daily life. In some individuals, these expectations may provide a strong incentive to work.

A further work function appears to be the satisfaction of an altruistic need. Some individuals become very concerned with the social value of their goods or services, and will be altruistically orientated to their work because they think that the work they are doing is socially useful. Some working organisations are more obviously concerned with socially desirable purposes than others eg hospitals, churches, universities, employment agencies, voluntary organisations and so on. Within these organisations, individuals may be orientated to their work because of their commitment to the goals of the organisation.

It is also argued here that man can be existentially orientated to his work. This refers to the extent to which the individual works because it is the work activity which makes his life meaningful. Hoffer (1963) argues that man in this Western culture works in part to know who he is. In other words, he secures from his job not only economic and psychological gratification but also philosophic identification. In "The Ordeal of Change" Hoffer (1963) expressed the view in the following way:

"That freemen should be willing to work day after day, even after their vital needs are satisfied, and that work should be seen as a mark of uprightness and manly worth, is not only unparalleled in history but remains more or less incomprehensible to many people outside the Occident ..... No one will claim that the majority of people in the Western world, be they workers or managers, find fulfilment in their work. But they do find it a

justification of their existence".

Many animal experiments have shown that rats like to explore interesting mazes, enjoy running in activity wheels, while monkeys like to solve puzzles and manipulate instruments. It seems that explanation, manipulation and the receiving of novel and interesting stimuli, and actual activity may be rewarding in themselves. It may also follow that people want to work to satisfy this need for activity and stimulation. Of course, these needs can be satisfied through leisure activities but it does appear that the Protestant ethic in this culture has conditioned people to satisfy this need for activity and stimulation through work.

Finally, it is proposed that a political orientation to work needs to be included as a distinct work function. This description is designed to represent the extent to which the individual believes in the social structure within which he works. It does seem that any examination of an individual's orientation to work is also an examination of his political orientation. Beliefs about work can be subject to different interpretations from differing political and philosophical points of view. For example, the main features of industrial or capitalist economies can have consequences for the social character of work which will influence an individual's willingness to be work-orientated. The image of work may be characterised by insecurity, differences in levels and types of reward, deprivations of various sorts, conflicts between workers and management concerning the attempts of one group to control the other, as resources in achieving goals and priorities. Capitalist features are also more conspicuously associated with inequalities in the society at large. These aspects are important because of their potential impact on people's commitment to the social structure including work.

At this stage the author concluded that neither did the literature suggest nor was he able to intuitively identify any further work orientations which were conceptually distinct from these 12 different types of work orientation. In summary, therefore, these

12 work orientations have been defined in the following way:

a. Economic - the extent to which the individual works for monetary gain;

b. Affiliative - the extent to which the individual works for social contact and friendship;

c. Socially Esteemed - the extent to which the individual works for the status and prestige of his occupational position;

d. Socially Obligated - the extent to which the individual works out of a sense of responsibility to the community;

e. Existential - the extent to which the individual works because it is the work activity which makes his life meaningful;

f. Security - the extent to which the individual works to create a stable life pattern;

g. Political - the extent to which the individual believes in the social structure within which he works;

h. Self-Fulfilling - the extent to which the individual's work realises his goals in life;

i. Power - the extent to which the individual works for the satisfaction of exercising power;

j. Achievement - the extent to which an individual's work provides an opportunity for getting on in life;

k. Altruistic - the extent to which an individual works because his work is perceived as being of social value;

l. Self-Identity - the extent to which an individual perceives his work as contributing to his self-image.

Finally, the time-perspective dimension of the author's occupational

belief systems model was represented by a proposed temporal work orientation which is defined as the extent to which an individual's desires and expectations from work are on an upward, downward or level gredient. It is argued that how we react to our occupational past or anticipate our occupational future, and the emphasis we place on them will affect our present orientation to work.

The following single statements were intuitively developed to measure the 12 different types of work orientation:

1. I work in order to provide myself with a good living (economic)
2. I work in order to meet people and make friends (affiliative)
3. My work gives me status socially (socially esteemed)
4. Work provides my life with a necessary routine (security)
5. I feel that I ought to work for the general good of society (socially obligated)
6. I work because I get satisfaction from my work (self-fulfilling)
7. My work gives me the chance to get on in life (achievement)
8. My work brings me self-respect (self-identity)
9. I work because it permits me to give service to others (altruistic)
10. Life, without work, is rather pointless and a waste of time (existential)
11. I enjoy exercising authority at work (power)
12. The ordinary working man's life is better in the UK than in most other countries (political)

The temporal work-orientation index was determined by asking the respondent to agree with one of these statements:

a. My working life used to be better

b. My working life is as good now as it ever was or probably ever will be

c. I expect my future working life to get better

Summary

An outline of some of the background ideas that led to the development of this study, and a clarification of the research objectives was presented in Part 1. The major terms to be used in the study were introduced, and the author presented his views on the importance of the study. The related literature was reviewed in order to provide a rationale for examining the appropriateness of the present study. An overview of the historical development of utilising cognitive structures in the study of personality was presented, and the application of belief systems to occupational choice theory was discussed. The author then proposed his Occupational Belief System model as a theoretical explanation for occupational choice behaviour, and the occupational choice theories which have already been presented in the literature were reviewed. The author's Occupational Belief Systems theory of Occupational Choice and Occupational Behaviour was proposed which propounds that occupational choice behaviour is a compromise between occupational beliefs, occupational persona constraints, and socio-economic constraints. The concept 'work orientation' was introduced in the final section of Part 2 to link the previous discussions on belief systems and occupational choice theory. It was argued that an individual's work orientation reflects his occupational system of beliefs, and an individual's particular work orientation determines his occupational choice. There was a review of the research relating to work orientations and finally, there was an outline of the theoretical development of the author's Occupational Beliefs Index, which was proposed as an instrument for measuring an individual's work orientation.

PART TWO

DEVELOPMENT OF THE OCCUPATIONAL PERSONA SELF-CONSTRUCT INVENTORY

5. A Review of the Related Literature

5.1 A Consideration of Self-Report Techniques in the Measurement of the Occupational Persona

It is argued here that on a job an individual wears an "occupational persona" - a mask which reveals some of him and hides some of him. Occupational behaviour need not be a complete expression of the person as he sees himself, but rather it is an expression of that part of himself that he wants to reveal publicly on the job. He chooses his occupational persona with the view from both sides of the mask in mind - how he thinks the world will look to him, and how he thinks he will look in the eyes of the world. It is a contentious problem whether a concept such as the 'occupational persona' can be reliably evaluated by a subjective self-report method, as opposed to 'objective' external behavioural observations. The author argues that the limitations of traditional self-report techniques can largely be erased by improved design, and illustrates the unreliability of "judges" ratings.

The case against self-report techniques usually argues that stimulus questions, and the instructions on self-report psychometric tests, require the respondent to extrapolate extensively from behaviour, to go beyond direct behaviour observation, and to supply subjective inferences about the psychological meaning of behaviour. Although the stimulus questions are standardised, their referents are unclear. Most items require the respondent to interpret behaviour, and to provide inferences about psychological attributes. Hence, it is argued, he must construe, evaluate and generalise about behaviour, rather than describe particular behaviours in particular contexts on clear dimensions.

Indeed, it is quite clear that the more vague stimulus referents are, the answers will refer more to the respondent's personal interpretations than to his nontest behaviour. Underlying the OPSCI construction is the thesis that behaviour is role-specific; that while people may construe themselves and each other as characterised by consistent dispositions, their behaviour across

different situations is far from homogeneous. Specific occupational stimulus referents, therefore, increase response accuracy, which is also enhanced by simplicity of item wording, and asking questions based on direct recall of specific occupational behavioural situations.

However, judgemental ratings of personality are susceptible to all the same variables that affect other personal constructs. They are, for example, easily and quickly generated from minimal information. They are readily and often erroneously generalised to events which they do not actually fit well. They are highly influenced by the details of the eliciting situation, and often firmly maintained in the face of contradictory evidence.

It may even be the case that judges may agree with each other over their ratings of another's behaviour, but they may not be related closely to independent data about the person from other sources. This is because people are not necessarily similar because they appear temporarily to be manifesting similar behaviour; nor for that matter similar because they have experienced similar events. People are similar because they construe or interpret in similar ways. Therefore, we do not need to put people in the 'same' experimental situation in order to find out whether they are similar or different. People in the 'same' situation may be behaving similarly for the time being but attaching a very different significance to the events they are encountering, and to their own behaviour. Any long term behavioural predictions we attempt to make on the basis of this temporary behavioural similarity is likely to be invalid.

It is consequently argued that no one can know reality directly. We can only construe and interpret it, usefully or uselessly. The same is true of the reality we call 'behaviour'. Immediately we asses behaviour, label or point to it, we have placed a construction upon it. In other words, we cannot make 'interpretation-free' contact with reality. Therefore, behaviour must be related to the person who behaves. What a person does, he does to some

purpose and he not only behaves, but he intends to indicate something by his behaviour.

When a judge observes the behaviour of a person and records what actually happens, the fact that he - an organism like any other - is observing, gives a false air of objectivity to the results of his observation. We all start from what Russell (1962) refers to as 'naive realism', that is, the doctrine that things are what they seem. The observer, when he seems to himself to be observing an object, is really observing the effects of the object upon himself. Therefore, when he thinks he is recording observations about the outer world, he is really recording observations about what is happening to him.

In general, the predictive efficiency of simple, straightforward self-ratings and measures of directly relevant past performance have not been exceeded by more sophisticated measuring techniques or 'objective' judges' ratings, or by combining tests into batteries. Research evidence indicates that self-reports have been found to typically provide the best indices of behaviour prediction.

Peterson (1965) pressed the point for the simplicity of self-report data when he found that self-ratings on "adjustment" and on "introversion-extraversion", each on a 7-pt rating scale, may be as useful as second-order factors calculated from Cattell's 16 PF test. Wallace and Sechrest (1963) studied 4 traits with 5 methods in a sophisticated multi-trait-multimethod design. Methods used included self-reports, ratings, projective techniques and behavioural indices such as academic achievement. The results showed that the discriminant validity of self-descriptions were not exceeded by any other source. Hase and Goldberg (1967) also showed in a careful study that the individual's own simple self-ratings were the best predictors of how their peers rated them; and these self-ratings were even better predictors than the best regression equations based on the best scale combinations. McArthur and Stevens (1955) showed that the directly expressed interests of college students in 1939 predicted their actual

occupations in 1953 at least as well and sometimes better, than their 1939 scores on the SVIB.

Behaviour rating variance is often attributable to systematic biases like rating response sets (for example, extremeness, tendency to use middle of scale, to agree with items regardless of content etc), to semantic ambiguities in the judges' interpretation of trait terms, and to ratings based on judges' stereotypes. Accuracy is often also affected by the extent to which the responses of the judge and assessee are alike, and by the degree to which the judge attributes his own responses to the assessee. In view of the relative specificity of judgemental accuracy it seems unlikely that many stable characteristics can be found that would discriminate among better and poorer judges "in general".

Much research in this area has concentrated on improving judgemental accuracy. In general, studies show no clear advantage for trained judges (eg Donet (1965); Goldberg (1959); Luft (1951)). Indeed, clinical training may reduce judgemental accuracy by introducing biases such as greater emphasis on pathology. It also appears that judgemental accuracy is not consistent across diverse situations. Judgemental "ability" appears to be factorially complex, not undimensional, unsolving perhaps several orthogonal factors. Krech, Crutchfield and Ballachey (1962) concluded from their extensive review that " .... there is no clear evidence for generalised ability to perceive others correctly .... " (p 65). It appears that the consistency of judgemental accuracy is as doubtful as other personality traits. Mischel (1972) concludes that "the predictions possible from a subject's own simple, direct self-ratings and self-reports generally have not been exceeded by those obtained from more indirect, costly and sophisticated personality tests from combined batteries, and from expert clinical judgements".

5.2 Theoretical Background of the Self-Theory underlying the Occupational Persona

There are several senses in which the 'self' concept is employed by personality theorists. Either the self is seen as a group of

psychological processes which determines behaviour or a cluster of attitudes or feelings the person has about himself but either way self occupies a prominent place in most personality formulations. Rogers formulated an explicit self theory but other theorists, including Allport, Adler, Cattell, Freud, Goldstein, Jung, Murphy, Murray and Sullivan, have made important use of the self-concept. The importance of the "psychological environment" or the world of experience as opposed to the world of physical reality, is accepted by most personality theorists. Lewin, Rogers and Kelly are perhaps the most prominent theorists to develop this theme and, in general, there is a growing tendency for personality theorists to give explicit attention to the socio-cultural context within which behaviour occurs.

Theoretically the occupational persona is built around the fundamental Rogerian concept of the 'self'. Rogers takes a phenomenological position with regard to the personality in that he holds the reality of an object, person or situation is purely a function of the way it is perceived by him. He reacts according to his perception of the various phenomena around him rather than to reality as defined in objective terms. Thus, according to Rogers, the only way to understand him is through his particular frame of reference.

The phenomenological positions adopted by Kelly, Mischel and Laing are outlined in a little greater detail in Section 6. However, all these theorists argue that every individual exists in a changing world of experience. It is argued that this world of experience can only genuinely be known by the individual himself. The psychologist with his methods of identifying and measuring stimulus properties and his tests for assessing personality cannot know the person's phenomenal field as completely as the person himself is capable of knowing it. According to this proposition the person is the best source of information about himself. Since his verbalisations are symbolisations of inner experience the psychologist can learn what exists in the person's private world by listening to what he says. A person does not react to external

stimuli as such but he reacts to his experiences of the stimulating conditions. Whatever he thinks is true, whether it is actually true or not, is reality, and it is this subjective reality which determines how he behaves. Therefore, "the best vantage point" says Rogers (1951) "for understanding behaviour is from the internal frame of reference of the individual himself". Rogers believed in self-reports as providing psychological data par excellence. Trying to understand the person by means of observations is less satisfactory. It, therefore, seemed theoretically more sound to set as the study objective, the development of an occupational persona self-construct inventory. In other words, an instrument which measures an individual's self-perceived impact on and relations with others at work.

5.3 Interpersonal Response Traits

When the occupational persona is defined as the "expression of that part of himself that he wants to reveal publicly", it is important to realise that we are referring to the social manifestation of his personality, or in other words, those interpersonal response traits which are enduring over time. Each one of us develops a distinctive set of enduring dispositions to respond to other people in characteristic ways. These dispositions - interpersonal response traits - help us to describe social man, understand his behaviour and predict his actions. The behaviour of the individual is, in fact, governed by the pattern of his interpersonal response traits. However, the personality of the individual is not a perfectly integrated system and the individual may take over attitudes that are inconsistent or contradictory because of the teachings of his authorities in different areas, because of his conflicting group affiliations, because of conflicting wants, and because of the demands of the particular situation; and consequently these interpersonal response traits are to some extent role-specific. It is, therefore, the objective of this study to construct a measure of the occupational persona as manifested by work interpersonal response traits.

This research into the nature of the occupational persona began

with an analysis of ideological interpersonal dissonance in the work situation. The researcher had observed a number of people in real work environments who appeared to characteristically arouse disharmony in their interpersonal negotiations. The traits which seemed to provoke interpersonal dissonance varied from person to person, and long before it was possible to define the relevant variables, it appeared that they were referring to a number of things - lack of sympathy, empathy, and diplomacy, aggressiveness, exhibitionism, authoritarianism, dogmatism, competitiveness, moodiness, unsociability, hypercriticism, hyperjocularity, hypersensitivity, hyperanxiety, pretentiousness, arrogance, egoinvolvement, dominance, submissiveness, nonco-operation, nonconformism, nonaltruism, and many more. This informal study proved helpful in the early stages of development in stimulating ideas about the crucial interpersonal response traits that provoked interpersonal dissonance, and what situational characteristics helped to determine the role-specific behaviour of people at work. However, this original interest in persons with extremely poor interpersonal functioning was meant to be only a point of departure. The research hopes to get a better understanding of the successful interpersonal negotiator just as much as the unsuccessful interpersonal negotiator - in other words the complete occupational persona.

In order to study the organisation of interpersonal response traits, it is necessary first of all to concern ourselves with their structure rather than their content. Each of us develops through chance, heredity and experience, a distinctive set of enduring dispositions to respond to other people in characteristic ways, and these dispositions play the central explanatory role for people's behaviour in social situations. There are multifarious interpersonal response traits that help to govern behaviour, and a trait, of course, is not something that exists on an all-or-none basis. It exists in different amounts in different persons. Every individual possesses some degree of each trait. There are, however, different nuances in style in dealing with, reacting to and handling people, and some forms of behaviour

are of less social significance than others. For example, Reusch (1953) distinguished between long-term "social techniques", and the more interpersonally significant short-term "social techniques" - interpersonal tactics like joking, teasing, flattering, testing out, and so on.

Only scanty data are available on the stability of interpersonal response traits over time. Kelly (1955) tested engaged couples by a personality inventory, on 2 interpersonal traits, self-confidence and sociability, and retested them after a 20 year gap. These results indicated that interpersonal response traits may be relatively stable over time. Stott (1957) observed a rather remarkable degree of stability of the interpersonal response trait of ascendance over a period of approximately 12 years. Morris et al (1954) studied the behaviour of 54 adults who had been referred to a child guidance clinic 16 to 27 years earlier, and he found similar patterns of interpersonal response trait stability.

5.4 Literature Review of Measures of Personality at Work

The only measure in the literature which specifically sets itself the objective of evaluating the functioning of individuals in interpersonal situations at work is the Guilford-Martin Personnel Inventory (1946). The inventory consists of 150 items and includes 3 sub-scales of objectivity, agreeableness, and co-operation. The test may pick out individuals who are likely to become discontented at work but will not probably pick out those who are intelligent enough to know that their natural impulse to answer a question may not coincide with the socially accepted one. The test has limited predictive validity, and validation studies do not present sufficient evidence that the test could be used for employment purposes.

Social judgement is an obvious factor relevant to the behaviour of individuals in groups. The term 'social judgement' has tended to be used interchangeably with other descriptions like social activity, social perceptiveness, sensitivity, empathy, person perception, social intelligence and social insight. Although not specifically

work-orientated, the George Washington Intelligence Test was developed originally in 1930 but later modified, and the most recent version was developed in 1955. The subjects are required to examine photographs representing various social situations, and then asked to answer questions producing 6 scores of judgement in social situations, recognition of mental state of speaker, memory for names and faces, observation of human behaviour, and sense of humour. The main criticism is that the test has a high correlation with abstract intelligence, and does not produce evidence of an independent social variable. Perhaps the test only measures verbal intelligence. Also the validation procedures are not satisfactory as there is no evidence to suggest that the results indicate how an individual would behave in a real situation.

Chapin's Social Insight Test (1939, 1967) was found to relate to ratings of social insight among staff members of social service agencies, persistence in graduate work in psychology. The test contains 25 items, each offering a social or interpersonal vignette, followed by statements that either diagnose the nature of the conflict presented or that indicate better and poorer steps to be taken in its resolution. In 1959, R N Cassell and M M Bruce developed in America a Test of Social Insight producing from 60 items, 5 sub-scale scores on agression, competition, passivity, co-operation, and withdrawal. Rather strangely the social insight score is obtained by adding a tenth of the co-operation scale score, twice the competitiveness score, and the other 3 scores with lower scores indicating greater social insight. However, there appears to be no evidence for a justification of this formula. Finally the norm groups are rather poorly described - for example, "adults" and "junior high students". Social insight is not defined but if one refers to it as empathic, intuitive or perceptive capacities for understanding or responding effectively in human social situations, this test appears to have little apparent relevance.

In 1967 L and V Gordon developed a measure described as a Survey of Interpersonal Values. It is an unpretentious instrument with

15 items for each 6 scales arranged into 30 triads. In each triad, the person ticks each statement most important and least important to him. The scales are support, conformity, recognition, independence, benevolence, and leadership, but the basis for including these 6 scales is not clear. The measure would also appear very open to faking because of the transparency of the items, and so it is of dubious value for occupational use.

An Empathy Test was developed by William Kerr in 1947. The test measures according to the manual, "the subject's ability to 'anticipate' certain typical reactions of defined normative persons". The test contains 3 sections (a) a list of 14 common types of music to be ranked in order of popularity; (b) 15 names of magazines to be ranked according to paid circulation; (c) 10 common annoying experiences to be ranked from most to least annoying; and the subject is asked to "place yourself in the position of" a defined normative group ranging from "non-office factory workers of USA" to "persons over age 40". One total score is obtained by summing the differences in ranks assigned by the subject from those in the normative group used.

However, there appears to be some disagreement on just what defines empathy. In the 'magazine list' case, the subject must isolate subscribers as a group from the entire American population. Such an extension would seem rather distant from the visual person to person interaction which is of presumed interest in this test. Also, the normative data for music preferences were obtained 'in a national survey programme' and have not been updated. Therefore, the current appropriateness of the norms requires careful inspection. The test appears to be more a measure of general information and prediction of opinions than of interpersonal empathy, and in the absence of predictive validity or relationship to other variables, it remains a rather meaningless construct.

Cline's method (1953, 1964) of looking at empathy is to present viewers with a series of filmed interviews, after each of which the observer guesses what the interviewee in the film did at

various key decision-making points in his past life, and to guess how he described himself and was described by others on an adjective check list. Although initial results have been encouraging, the method is too time-consuming to have much practical application.

None of the above instruments appear to possess the developmental sophistication necessary for widespread use in evaluating the expression of interpersonal response traits in the work situation. Each is vulnerable to criticism in the areas of validity, pervasiveness to overt behaviour and ease of application. In other words, the tests appear to lack the predictive validity by demonstrating that they actually measure what they purport to measure in an easily applicable way.

However, there have been some more fruitful attempts to measure personality traits, which appear to have relevance in content and range to assessing and predicting style of interpersonal functioning. Probably the most extensive study of the relation between attitudes and personality dynamics is that of Adorno et al (1950). The authors constructed a scale called the F(Facism) Scale which attempts to measure ways of feeling and thinking assumed to characterise people who have a readiness to accept an antidemocratic ideology. The F scale, therefore, appears to relate to an individual's perceptions of others. Scodel and Mussen (1953) confirmed the hypothesis that "authoritarians because of their lack of insight into others, and their need to consider themselves members of the in-group, would perceive non-authoritarian peers to have attitudes and personality characterstics similar to their own". This characteristic of imperceptiveness is also supported by the studies of Crockett and Meidinger (1956) and Rabinowitz (1956) among others, and it is this characteristic which would seem to have relevance in predicting interpersonal functioning.

Occupational psychologists have made good use of the F scale. Vroom (1959) found that workers in a delivery company who were low F scale scorers tended to work more productively under democratic leaders, while high F scale scorers produced more under

directive supervision. Kernan (1964) found that human relations training for supervisory engineers did not lead to changes on the F scale. However, the F scale's usefulness is limited by its transparency, and consequent fakability.

Rokeach (1954, 1960) has extended the concept of authoritarian disposition in his work on dogmatism. He defines this concept as 'closed-mindedness', and this takes the form of resistance to the acceptance of information which is contradictory to the individual's system of beliefs. An undogmatic individual would be more accepting of new experiences and information which might challenge his system. Rokeach points out that a narrow, unsophisticated perspective leads an individual to experience threat to his closed-belief system when he encounters those who are outsiders. Accordingly he is less willing to tolerate relationships with those who are different from himself. The difference between authoritarianism and dogmatism is that dogmatic individuals may be dogmatic irrespective of a particular ideology. Rokeach's Dogmatism Scale has obvious implications for predicting style of interpersonal functioning. Haiman and Duns (1964) show that individuals who score high on the dogmatism scale have been found to be less sensitive to the social impressions which they convey on others. Rosenfeld and Nauman (1969) found that peers indicated that their contacts with dogmatic students became less satisfying over time, while their contacts with non-dogmatic students became more satisfying. In 2 separate studies, scores on the Dogmatism Scale were found to correlate only .02 and -.01 with intelligence as measured by standard group tests. These zero correlations strongly suggest that open-mindedness and intelligence represent quite different aspects of an individual's personality.

The concept of 'social desirability' is another interpersonal response trait which has been the subject of research. Edwards (1957) developed a Social Desirability Scale, and Allison and Hunt (1959) report that high scorers were more affected by situational cues for their appropriate responses. Crowne and Marlowe (1964) have developed a Social Approval Scale, and high scorers have been shown significantly more likely to conform to others than those who score low.

Crutchfield (1955) has discovered relationships between conforming tendencies and interpersonal relations. The conformists exhibit intense preoccupation with other people, as contrasted with the more self-contained, autonomous attitudes of the independent persons. The interpersonal behaviour of the conformists tend to show far more passivity, suggestibility, and dependence upon others. However, other evidence suggests that one feature of conformity is to reward others in social interaction. Homans (1958, 1961); Thibaut and Kelley (1959); Gouldner (1960); Blau (1964) construe conformity as a reward for others which yields positive effects from them. Jones (1964, 1965) sees conformity as a way of creating a favourable impression, or at least, avoiding an unfavourable one. This leads, in turn, to certain desired outcomes from the interaction. Nord (1969) in his study on conformity as social exchange, says that social support can be obtained through conformity.

R E Berrberg (1954) developed the Human Relations Inventory to measure the dimension of social conformity. He defines social conformity as "the tendencies of members of a society to manifest communality of attitudes". The test consists of 37 items aimed at measuring 6 determinant areas of social conformity - moral values, positive goals, reality testing, ability to give affection, tension level and impulsivity. Each item is presented as a 5-option multiple choice. The scores do not correlate highly with intelligence, socio-economic level, cultural background, age, sex or religious affiliation but the norms are inadequate, and the absence of predictive validity would argue against it being used as a diagnostic or screening instrument at this time. Furthermore, there are no bases given for the selection of the 6 areas determining social conformity, and there is no correlation data to show that they do represent different areas. A factor analysis would obviously be relevant.

In 1953 Janet Taylor developed the Manifest Anxiety Scale. The importance of this scale in the present context stems mainly from the consideration that certain social stimuli, such as hostile interactions, can elicit varying responses from individuals as a

function of their anxiety proneness (Bovard 1959). The scale appears to be well validated, and although it may have relevance for screening individuals with interpersonal difficulties, this area, as yet, remains unexplored.

Vast amounts of research have concentrated on the concept of creativity, although the present impetus only commenced around 1950. Creative potential does not appear to be adequately appraised by conventional tests of intellectual ability (Getzels and Jackson 1962; Welsh 1971). Welsh (1959) has developed a Figure Preference Test for measuring creative potential. The revised version (Welsh 1969) has 30 like and 30 dislike items and correlates very highly with common sense ranking for creativity.

Guildford (1966) has developed "unusual uses tests" to measure "divergent thinking" and the original response to Rorschach Inkblot cards has also been used to measure this facet. Self-report scales have been developed by Domino (1970) and Smith and Schaefer (1969) and both scales identify individuals who tend to be imaginative, impulsive, noncomforming and spontaneous in thought and behaviour. These kind of tests have been applied successfully to various occupational groups eg creative architects were found to score highly on the Barron-Welsh Art Scale (Hall and McKinnon 1969).

"Field independence" or "field articulation" occurs when the individual is able to perceive items as discrete from an organized ground when the field is structured, or if unstructured to impose organisation and utilize this structure in coping with the perceptual phenomenon. The "Rod-and-frame" test is a popular measure of this factor in which a movable rod is presented visually in a frame that may be tilted to left or right; the task of the subject is to adjust to true verticality having no background cues. Another measure is the "embedded-figures test" in which the task is to find a single figure embedded in a complex figure. Research shows field independence to have an almost astonishing range of implications. Witkin (1965) and Witkin, Lewis and Weil (1968)

show that at the field-dependent pole problems of identity diffusion, alcoholism, passivity, character disorder and hallucinatory states are common, and at the field-independent pole problems of paranoia and delusional thinking are more frequent. Crutchfield, Woodworth and Albrecht (1958) have identified high scorers as persons judged by others to be insightful, reliable and able to cope with complexity.

A substantial amount of work has been carried out on Murray's (1938) concept of need:achievement. Murray defined this concept as the need "to overcome obstacles, to exercise power, to strive to do something difficult as well and as quickly as possible". (1938 pp 80-81). The strength of the need is typically inferred from stories told in response to the Thematic Apperception Test. Campbell, Dunnette, Lawler and Weick (1970) redefined the variable to take account of the fear of failure facet. The n:ach they argued is a multiplicative function of the strength of the achievement motive, the subjective probability of success, and the incentive value of success. Conversely, the behavioural tendency to avoid failure by avoiding the task is a multiplicative function of the strength of the need to avoid failure, the subjective probability of failure and the incentive value of failure. Managers and successful performers tend to have higher n:ach scores but the relationship is not strong enough to permit forecasting for the individual case. Objective measures of n:ach have been developed including the achievement scales of the Edwards Personal Preference Schedules but the record of personality inventories in personnel selection has not been encouraging (Guion and Gottier 1965).

The way a person feels about himself also has important consequences for his interaction with others, and this is suggested by the relationship between self-acceptance and the acceptance of others. Those individuals with low self-esteem tend to feel more alienated from others. Rosenberg (1965) suggests that the 'egophobe' has low faith in himself and in others, and believes that others have a low opinion of him; he, therefore avoids groups.

Several research projects have made use of a self-esteem index which is evaluated by recording self-rated discrepancies between the individual's perceived self-image and his ideal self-image. Where the gap is small, high self-esteem is indicated, whereas a large discrepancy indicates a low self-esteem. A moderately small discrepancy is considered a healthy adjustment as most persons set themselves realisable goals, and having attained them, revise them slightly in an upward direction.

Finally, although many other personality theorists have produced their own personality inventories (eg most notably Cattell and Eysenck), they tend only to relate in a very limited way to an individual's work behaviour. However, Cattell's work does deserve to be mentioned because for many years he has empirically investigated the relationship between personality and occupations. He attempts to demonstrate that his Sixteen Personality Factor Questionnaire (16PF) does discriminate between occupational groups. The 16 factors isolated by Cattell refers to sociability, intelligence, emotional stability, dominance, extraversion, superego strength, adventurousness, sensitivity, suspicion, introversion, sophistication, insecurity, radicalism, self-sufficiency, strong willed, excitable. These adjectival "translations" are a compromise for communication purposes although they are narrower in meaning than the descriptions provided by Cattell.

Cattell has in fact compiled a large number of occupational profiles - mean factor scores for various occupational groups - and the more nearly a subject's scores resemble those of a given group profile the more suitable he is thought to be for that occupational group. Cattell has also devised a 7-point "occupational fitness" scale based on the pattern - similarity coefficient (rp). However, no predictive validity is offered in relating these factor profiles against job success or satisfaction, and there is only small empirical evidence supporting their power to discriminate occupationally

Overall, therefore, the author considered that none of the existing

measures adequately evaluated the functioning of individuals in interpersonal situations at work. The following sections present an account of the author's attempt to fill this void in the field of personality measurement.

6. Construction of the OPSCI

6.1 Item Generation

The OPSCI was constructed by using factor analysis techniques. The number of factors obtained from such a technique is limited by the number of items initially used, and therefore, the first objective was to generate items designed to represent as fully as possible, the range of interpersonal response traits likely to be manifested in the work situation. Some items were derived from a questionnaire asking a sample of 25 individuals to recall a specific person at work whom he liked or disliked as a person, and not for his views or opinions, and then asked to state what this person had done which he found agreeable or disagreeable. This study was followed by investigations designed to locate important constructs in the work personality domain through a consideration of other personality tests. For example, the author adapted items from the instruments of Guilford, Cattell and Eysenck, 3 of the best known writers in the field of personality measurement. Finally, the largest proportion of items were collected on an intuitive basis and from the published works of other investigators like Argyle, Gough, Rokeach, Adorno, Bernberg, Edwards, Taylor, Krech and Crutchfield.

The generated items were all classified into what the author intuitively regarded as conceptually distinct construct categories. In total, 309 items were classified into 29 conceptually distinct categories in terms of the interpersonal response trait with which they appeared to coincide. Each arbitrary, but conceptually distinct, category was represented by several items to increase the reliability of the area under examination. Table 2 presents details of the 29 categories. All 309 items are reproduced in full in Appendix A.

Attempts were made to reduce excessive similarity between items in the pool and thus avoid creating subsets of items that are essentially alternate ways of asking the same question. If there is great similarity in such a homogeneous subset, they will correlate considerably higher among themselves than they will with items outside the subset, and they will be apt to define their own separate factor in the solution. A factor produced in this way is obviously not desired in an attempt to create a taxonomy for the whole of the work personality.

6.2 Research Study

The first draft of the OPSCI, therefore, consisted of 309 items and this questionnaire is reproduced in full in Appendix A. Each item was answered by using one of the following 2 scales:

Scale X	:	(a) True	(b)	In Between	(c)	False
Scale Y	:	(a) Yes	(b)	In Between	(c)	No

To control for acquiescence response bias, half the items in each conceptually distinct category were positively phrased, and half were negatively phrased. The development work and the subsequent field work for this first draft of the OPSCI was undertaken by the author while he was registered at the University of Glasgow. The sample, therefore, to whom this questionnaire was administered were all resident in Scotland and they were drawn from a cross-section of the working population from unskilled to professional workers. The sample consisted mainly of Open University students and their work colleagues, clients and staff from the Manpower Services Commission's Employment Rehabilitation Centres, staff from a Local Authority Social Work Department, and staff from a Nurses' Home. The age of the sample ranged from 17 years to 65 years; the mean age was 36.5 years. The sample characteristics are outlined on the following page.

Table 1

		No	%
Sex	Male	273	67.6
	Female	131	32.4
Age	17-25 years	112	27.9
	26-35 years	69	17.1
	36-50 years	152	37.6
	51-65 years	68	17.0
Occupational Group	Professional/Senior Management	24	5.9
	Line Management/Technical	50	12.4
	Commercial/Personal Services	160	39.6
	Skilled	71	17.6
	Semi-skilled/Unskilled	95	23.5
	Not Ascertained	4	1.0

The data accumulated from this sample was not analyzed until the author had transferred his registration from the University of Glasgow to the Polytechnic of Wales in the early part of 1978. It had been the original intention of the author to undertake a factor analysis of all 309 item variables in the same program. However, no factor analytic program was available to the UWIST or Polytechnic of Wales computers which could handle such a factor analysis with so many variables. The BMD factor analytic program available to the UWIST computer performed at that time a factor analysis of up to 198 input variables, and the SPSS factor analytic program available to the UWIST and Polytechnic of Wales computers performed a factor analysis of up to 100 variables.

Therefore, a revised strategy was developed for analyzing the data which incorporated the use of a hierarchical factor analytic model, which is described below in detail. Another important feature of this new design was the use of the concept of the Factored Homogeneous Item Dimension (FHID) as the basic unit of the factor analysis. Comrey (1973) reports on the use of this approach in the development of the Comrey Personality Scales. The FHID consists of items which have been shown to have both

conceptual and statistical homogeneity. The first stage, therefore, in developing FHIDs is to formulate verbal definitions of as many conceptually distinct categories as seems relevant to the task of building a taxonomy of the work personality, and then a pool of items needs to be developed for each of these defined concepts. As the author had already used such a framework for generating items, a pool of 309 items already existed representing 29 conceptually distinct constructs.

The second stage of the FHID approach is to carry out factor analyses of items in which all the items for a given construct are included in the same analysis together with items designed to measure other constructs. A point was also made of not including in the same analysis items of constructs which were considered to be conceptually similar. The objective of these factor analyses was to determine whether the conceptually homogeneous categories also had statistical homogeneity; in other words, whether several items had high loadings on one particular factor and low loadings on all other factors. Any factor construct which thus did not have both conceptual and statistical homogeneity was eliminated from the next factor analysis.

Prior to the commencement of the first factor analysis, there was a further inspection of the content of the 309 items in an attempt to reduce excessive similarity between items in the pool and thus avoid creating subsets of items that are essentially alternate ways of asking the same question. This was a relatively arbitrary process but it was decided that on the basis of an examination of item content. For example, the conceptual similarity of items was reconsidered leading to the elimination of some items which appeared to be extremely similar to other items. The 309 items pool was thus reduced by 32 items leaving 277 items to be factor analyzed. Table 2 presents the list of the 29 categories and the identity of the remaining items representing each category. The following list indicates the items which were omitted from the factor analyses, together with information on their FHID category, and the item(s) to which they were considered to be conceptually similar.

Details of Items Eliminated from the Hierarchical Factor Analyses

ITEM NO	FHID	SIMILAR ITEMS
Q128	Sociability v Aloofness	Q257
Q137	Sociability v Aloofness	Q3
Q277	Sociability v Aloofness	Q201
Q300	Sociability v Aloofness	Q195, Q204
Q59	Stability v Instability	Q24
Q101	Stability v Instability	Q45
Q190	Stability v Instability	Q24
Q240	Stability v Instability	Q273
Q112	Tension v Relaxation	Q78, Q167
Q188	Tension v Relaxation	Q10
Q228	Tension v Relaxation	Q142
Q254	Tension v Relaxation	Q96, Q135
Q118	Dogmatism v Adaptability	Q242
Q213	Dogmatism v Adaptability	Q15
Q287	Dogmatism v Adaptibility	Q150
Q86	Dominance v Submissiveness	Q76
Q130	Dominance v Submissiveness	Q117
Q133	Carefreeness v Sobriety	Q110, Q116
Q218	Carefreeness v Sobriety	Q116
Q23	Reflective v Impulsive	Q9
Q90	Reflective v Impulsive	Q189
Q248	Reflective v Impulsive	Q9
Q72	Introversion v Extroversion	Q61
Q233	Introversion v Extroversion	Q104
Q258	Introversion v Extroversion	Q104
Q284	Introversion v Extroversion	Q104
Q65	Intense v Easy-Going	Q8
Q266	Active v Passive	Q36
Q75	Empathic v Unempathic	Q235
Q85	Organizer v Poor Organizer	Q50
Q308	Competitive v Uncompetitive	Q80, Q180
Q200	Appearance Concern v Lack of Concern	Q74

Table 2 Identity of Items Representing FHIDs in the Hierarchical Factor Analyses

	Items Representing the Conceptually Distinct Categories	Item Total
1. Sociability v Aloofness	3,7,39,173,195,196,201,204, 231,234,257	11
2. Dogmation v Adaptability	15,48,82,110,150,151,183,186, 242,288,301,302	12
3. Aggression v Accommodation	11,44,129,145,156,162,178, 193,238	9
4. Stability v Instability	24,45,121,155,157,177,187, 221,273,307	10
5. Tension v Relaxation	5,10,27,58,78,79,81,96,135, 140,142,167,181,209,210,237, 269,276,283,298	20
6. Dominance v Submissiveness	21,76,117,122,131,152,185, 211,229,236,255,289	12
7. Depression v Elation	28,43,63,97,119,161,192,250, 297	9
8. Carefreeness v Sobriety	22,32,56,67,100,116,124,148, 171,208,227,241,253,262,272	15
9. Reflective v Impulsive	9,25,57,92,107,123,158,175, 189,220	11
10. Confident v Unconfident	68,106,109,144,207,247,261, 280	8
11. Tolerant v Intolerant	51,64,111,134,166,197,226, 252,263,278,282	11
12. Active v Passive	36,70,126,136,256,286	6
13. Shyness v Social Ease	13,35,46,52,73,88,165,169, 179,245,265,285	12
14. Introversion v Extroversion	4,6,40,61,71,94,104,127,139, 230	10
15. Organiser v Poor Organiser	17,20,30,50,53,89,91,164,172, 176,199	10
16. Rational v Irrational	16,41,42,153,154,244	6
17. High egocentrism v Low egocentrism	55,98,132,198,203,216,224, 292,294	9
18. Sympathetic v Unsympathetic	60,95,105,138,202,295	6
19. Sensitive v Insensitive	1,31,87,149,168,205,232,264, 296	9

Table 2 (Cont.d)

	Items Representing the Conceptually Distinct Categories	Item Total
20. Diplomatic v Undiplomatic	33,62,77,206,268	5
21. Appearance Concern v Lack of Concern	2,14,37,49,74,83,103,170	8
22. Intense v Easy-Going	8,66,141,143,163,194,212,215, 217,219,249,267,275,299	14
23. Empathic v Unemphatic	84,108,125,174,191,235,259, 260,279	9
24. Competitive v Uncompetitive	12,47,80,114,147,180,225,270	8
25. Rebelliousness v Acceptance	19,115,120,182,184,214,290,306	8
26. Dependence v Independence	18,34,54,93,113,160,239,243, 271	9
27. Pretentiousness v Unpretentiousness	29,102,223,251,274,281,291,304, 309	9
28. Altruistic v Unaltruistic	26,38,69,99,159	5
29. High work-involvement v Low work-vinvolvement	222,246,293,303,305	5

The response distributions for the 309-item scale are listed in Table 3, and overall the response patterns are very reassuring. There is little evidence of a tendency-to-agree to a tendency-to-disagree response set. The one individual who had under 10% "yes" responses on the 309-item scale tended to display a tendency-to-disagree response set (ie 28 "yes" responses; 158 "no" responses; and 123 "in between" responses). The one individual who had more than 70% "yes" responses on the 309-item scale, also had 79 (25.5%) "no" responses.

Questionnaires of all kinds are subject to response sets ie the tendency of subjects to prefer certain kinds of answers (such as "yes") irrespective of the content of the question. It was, of course, hoped that the tendency-to-agree set ("acquiescence") had been eliminated in the OPSCI by equalising the number of items for which "yes" and "no" answers contribute positively to the score on

each factor. However, it tends to be very difficult to interpret self-report responses to determine whether any response sets are in operation. In the final analysis, such decisions must be made on the basis of rather arbitrary evaluations. Nevertheless, data inspections which can demonstrate the absence of extreme response patterns, contribute to an evaluation of the reliability of the data. Overall, it is perhaps debatable whether the figures below reflect response sets as such rather than occupational persona idiosyncracies as measured by the OPSCI. The extreme scores in all cases are extremely small, and insufficient to significantly affect the outcome of the factor analyses. The low levels of "in between" responses reflects the scale questionnaire instructions which asked respondents to "try not to fall back on the middle 'uncertain' answers except when the answer at either end is really impossible for you".

Table 3 Distribution of Responses to the 309-Item Scale

%	"Yes" Response	"No" Response	"In Between" Response
91-100	0	0	0
81-90	0	0	0
71-80	1	0	0
31-70	305	367	83
21-30	77	34	77
11-20	20	3	127
0-10	1	0	117

In the original list of 309 items there did exist a repeat item. It was situated at Q74 and Q200 and was phrased as follows: "I never give any thought to the impression I create at work". The statement strongly favoured a "no" response and the response pattern to this item on both occurrences was almost identical, as shown in Table 4 overleaf.

Table 4

	Yes	In Between	No
Q74	49 (12.1%)	51 (12.6%)	304 (75.2%)
Q200	48 (11.9%)	44 (10.9%)	311 (77.0%)

However, it is even more meaningful to examine the frequency of individual responses according to the 2 variables, Q74 and Q200, by means of a crosstabulation analysis. These joint frequency distributions are displayed in Table 5 below.

Table 5

Q74	Q200		
	Yes	In Between	No
Yes	22 (5.5%)	8 (2.0%)	19 (4.7%)
In Between	10 (2.5%)	22 (5.5%)	18 (4.5%)
No	16 (4.0%)	14 (3.5%)	274 (68.0%)

The crosstabulation analysis indicates that the individual subjects answered the two questions in very similar ways. 79% of the sample gave the exact same response to the two items, and only 8.7% gave the exact opposite response.

This repeat item can be interpreted as a measure of the consistency with which the subjects responded to the questionnaire.

The similarity of the response patterns to this repeat item provide further encouraging support to the reliability of the data.

6.3 The Hierarchical Factor Analytic Model

The hierarchical factor analytic model introduced by the author to analyse the data involved the computation of 7 factor analyses. As has already been explained, the basic unit of the factor analyses was the FHID. That is, in factor analysis I, II, III and IV the FHIDs were represented by items which, on inspection, were considered to have conceptual homogeneity. The items representing each conceptually distinct category have already been outlined in Table 1, and Table 6 identifies which FHIDs were included in each factor analysis. The FHIDs retained for factor analyses V, VI and VII consisted of items which had been shown to have both conceptual and statistical homogeneity. Each FHID was represented by a minimum of 5 items. The outline of this hierarchical factor analytic model is illustrated below.

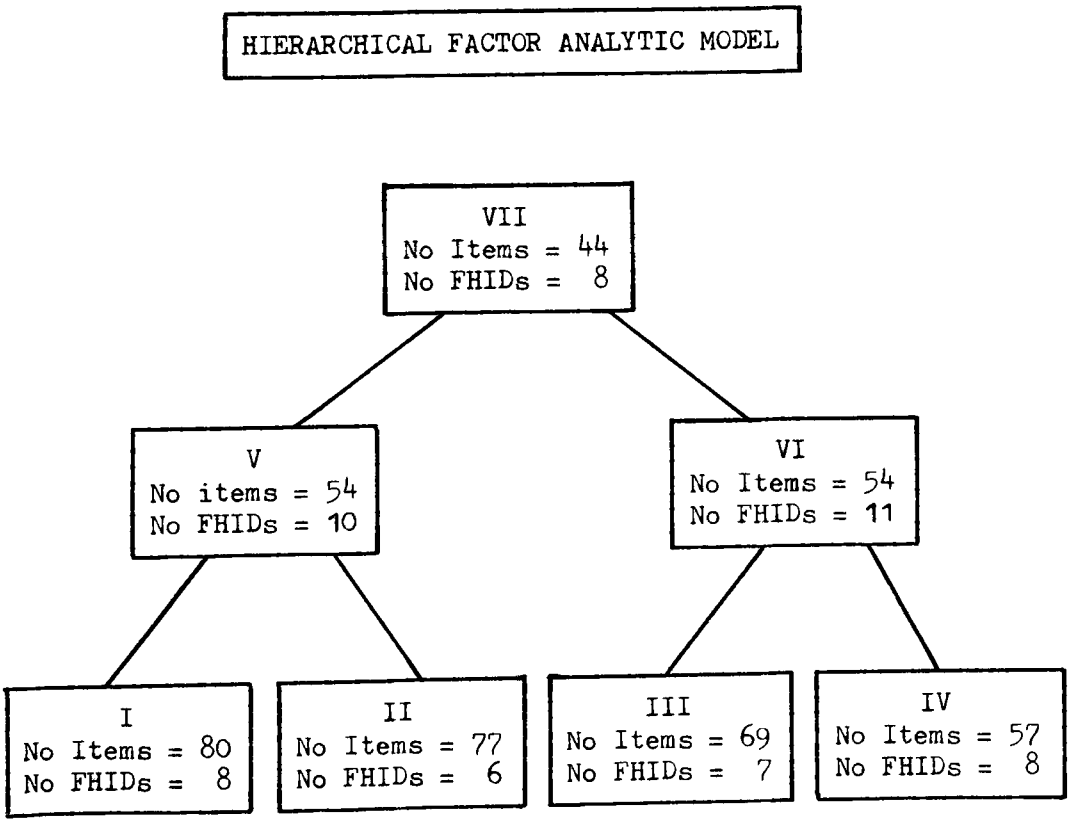


Table 6 FHIDs Included in the Factor Analyses

Factor Analysis Ident.	FHIDs Included in the Factor Analyses	
I	(1) Reflective v Impulsive	(5) Dominance v Submissiveness
	(2) Depression v Elation	(6) Active v Passive
	(3) Confident v Unconfident	(7) Tension v Relaxation
	(4) Tolerant v Intolerant	(8) Shyness v Social Ease
II	(1) Stability v Instability	(4) Organiser v Poor Organiser
	(2) Introversion v Extroversion	(5) Rational v Irrational
	(3) Carefreeness v Sobriety	(6) High egocentrism v Low egocentrism
III	(1) Sociability v Aloofness	(5) Appearance Concern v Lack of Concern
	(2) Sympathetic v Unsympathetic	(6) Intense v Easy-Going
	(3) Sensitive v Insensitive	(7) Empathic v Unempathic
	(4) Diplomatic v Undiplomatic	
IV	(1) Rebelliousness v Acceptance	(5) High work-orientation v low work-orientation
	(2) Agression v Accommodation	(6) Dogmatism v Adaptability
	(3) Dependence v Independence	(7) Altruistic v Unaltruistic
	(4) Pretentiousness v Unpretentiousness	(8) Competitive v Uncompetitive
V	(1) Shyness v Social Ease	(6) Dominance v Submissiveness
	(2) Depression v Elation	(7) Carefreeness v Sobriety
	(3) Confident v Unconfident	(8) Tolerant v Intolerant
	(4) Stability v Instability	(9) High egocentrism v Low egocentrism
	(5) Tension v Relaxation	(10) Dependence v Independence
VI	(1) Sociability v Aloofness	(7) Reflective v Impulsive
	(2) Diplomatic v Undiplomatic	(8) Agression v Accommodation
	(3) Sympathetic v Unsympathetic	(9) Rebelliousness v Acceptance
	(4) Competitive v Uncompetitive	(10) Appearance Concern v Lack of Concern
	(5) Conformist v Nonconformist	(11) Dogmatism v Acceptability
	(6) Empathic v Unempathic	
VII	(1) Tension v Relaxation	(5) Dominance v Submissiveness
	(2) Stability v Instability	(6) Sociability v Aloofness
	(3) Depression v Elation	(7) Aggression v Accommodation
	(4) Carefreeness v Sobriety	(8) Dogmatism v Adaptability

Factor analyses I, II, III and IV were undertaken to analyze the 29 conceptually distinct FHIDs which had already been identified. Following an inspection of factor analyses I, II, III and IV, concepts that failed to produce statistically acceptable FHIDs were dropped out. FHIDs that proved to be factorially complex, that is, have items with high loadings on more than one factor, were eliminated. In this way, groups of items (FHIDs) were eliminated from the hierarchical factor analysis. However, it was clear that the conceptual distinctions between some categories were rather blurred (eg sociability-aloofness and carefreeness-sobriety), and thus items belonging to one category would be transferred to another category if they loaded highly with the items in another category, and they continued to maintain the conceptual homogeneity of the category. For example, in the final 7 factors which emerge and which are described in 6.6, three of the carefreeness-sobriety items (Q100, Q124, Q227) load on the sociability-aloofness factor, although the 5 items with the highest loadings are from the original sociability-aloofness category.

From the initial four factor analyses, 21 statistically homogeneous FHIDs emerged, and these FHIDs provided several items with high loadings on each factor, and the content of the items of each FHID was considered to be relatively diverse. These 21 factors, which were considered to be statistically and conceptually homogeneous, were then analysed in a further 2 factor analyses in order to continue the attempt to refine and improve the factors. Only 8 of the previously established factors were replicated in these 2 analyses.

The variables in these 6 initial factor analyses were intercorrelated using the Pearson product - moment correlation coefficient. These 6 correlation matrices are reproduced in Appendix C together with the communality estimates. Each correlation matrix was factor analysed by the principal factoring method. This method automatically replaces the main diagonal elements of the correlation matrix with communality estimates.

Initial estimates of the communalities are given by the squared multiple correlation between a given variable and the rest of the variables in the matrix. In this method, therefore, inferred factors are automatically obtained.

The principal factoring method employed also has an iteration procedure for improving the estimates of communality. In other words the number of factors to be extracted from the original correlation matrix are determined, then the main diagonal elements of the correlation matrix are replaced with initial estimates of communalities. Then the same number of factors are extracted from this reduced matrix and the variances accounted for by these factors become new communality estimates. The diagonal elements are then replaced with these new communalities. This process continues until the differences between the 2 successive communality estimates are negligible.

The Kaiser criterion was adopted to specify the number of unrotated factors to be retained. The Kaiser criterion specifies that only factors with factor contributions or eigenvalues of 1.0 or greater should be retained in a factor analysis. Kaiser (1960) however, only argued that such factors are generalizable factors under the assumptions of Alpha Factor Analysis. When the Kaiser criterion is applied with other factor analytic models (like the present principal factoring model) it tends to underestimate the number of "real" factors in the matrix. Humphreys and Ilgen (1969) argue that this is especially true when the analysis is done on a reduced correlation matrix, such as factor analyses of matrices with squared multiple correlations as the diagonal elements. Extracting too few factors leads to misidentification of the true factor structure with additional important factors likely to appear in subsequent factor analyses of the same variables. Consequently, because of the danger of underestimating with the Kaiser criterion rotated factors were also retained if its factor contribution or eigenvalue accounted for more than 4.0% of the total variance extracted.

6.4 Factor Analysis of the FHIDs

From the 6 initial factor analyses included in the research strategy, 8 statistically and conceptually homogeneous factors had emerged. In the final factor analysis, the 8 emergent FHIDs were included together in the same analysis. Each FHID was represented by at least 5 items. The 44 items included in the analysis are listed below together with the factor name. The X or Y after the item indicates the response scale to be used. The format of the response scales are outlined on a previous page.

FI: "TENSION V RELAXATION"

- 27Y I usually feel uncomfortable when having to mix with a new group.
- 58Y I often feel self-conscious when talking to supervisors at work.
- 81X Starting conversations with strangers at work is usually rather difficult for me.
- 140Y I am slow to trust people at work.
- 142Y I am easily embarrassed when people watch me work.

FII: "STABILITY V INSTABILITY"

- 45Y I am usually calm and not easily upset at work.
- 121Y I can take kidding or teasing at work without getting upset or nervous.
- 157X My mood at work does not often go up and down.
- 187Y I believe that people at work consider me a predictable person.
- 221X I don't often feel 'fed up' at work.
- 273X My spirits at work generally stay high no matter how much trouble I meet.
- 307X I rarely get annoyed in company.

FIII: "DEPRESSION V ELATION"

- 28Y My future at work looks very dismal.

97X There is little chance for promotion in my job unless I get a lucky break.

161Y It seems to me that most people in positions of authority are not really interested in the problems of the average man.

192Y I believe that the situation of the average man is getting worse, not better.

250Y I often feel listless and tired at work for no good reason.

FIV: "CAREFREENESS V SOBRIETY"

56Y I am an easy-going person at work, not generally bothered about having things just so.

100Y I like cracking jokes and telling funny stories to friends at work.

124Y I would call myself a happy-go-lucky person at work.

208X I don't mind if people interfere with my affairs at work.

227Y When newly introduced to people, I try to put them at ease with jokes and humour.

FV: "DOMINANCE V SUBMISSIVENESS"

30Y I believe that without me my place of work would not be as efficient.

53Y I like to organise people at work.

89Y I believe that I have the ability to inspire people to work better.

158Y I like doing jobs in which I have to act quickly.

176Y I would rather work with several people under me rather than in a team.

236Y I enjoy having responsibility at work.

FVI: "SOCIABILITY V ALOOFNESS"

3Y I like mixing with other people at work.

39Y I find it easy to enjoy myself socially at work.

195Y I believe that I am quite popular at work.

196Y At work, I usually make an effort to keep other people cheerful.

204Y I believe that my manner at work is very friendly.

234Y I appear to have many friends at work.

FVII: "AGGRESSION V ACCOMMODATION"

44Y I have had some quarrels with people at work.

129Y I sometimes get cross at work.

162Y Once in a while at work, I lose my temper and get angry.

178Y I have been or nearly been in a fight at work.

193Y I have sometimes told lies to people at work.

FVIII: "DOGMATISM V ADAPTABILITY"

110Y My advice to people is be cautious - take time and think things over.

150Y I believe that to work effectively bosses must be obeyed and respected.

151Y I believe that there are 2 kinds of people at work: the responsible and the irresponsible.

183Y I believe that there is only one correct way of running things at work.

186Y I believe that rules must be followed strictly if work is to be efficient.

6.5 The Analysis

The 44 variables described in the previous section were inter-correlated using the Pearson product-moment correlation co-efficient. This 44 x 44 matrix of correlation coefficients is

shown in Table 7. The correlation matrix was factor analyzed by the principal factoring method. Twelve iterations were carried out, and the factor loadings obtained were a function of communality estimates. The initial communality estimates are given by the squared multiple correlation between a given variable and the rest of the variables in the matrix, but subsequently the iteration procedure is employed to improve the estimates of communality. In a similar way to the previous analyses the number of factors to be extracted from the original correlation matrix are determined, then the main diagonal elements of the correlation matrix are replaced with initial estimates of communalities. Then the same number of factors are extracted from this reduced matrix and the variances accounted for by these factors become new communality estimates. The diagonal elements are then replaced with these new communalities. This process continues until the differences between the 2 successive communality estimates are neglible.

Twelve factors were retained for rotation on the basis that their eigenvalues were 1.0 or greater. These 12 factors were orthogonally rotated by the Varimax method. The Varimax solution (Kaiser 1958) finds the rotational position that simplifies the description of each factor by maximizing the variance of its factor loadings. It accomplishes this by finding the solution that has the most divergent factor loadings for each factor, as reflected in factor loadings that are nearest the extremes of 1.0 and 0.0. Therefore, Varimax was used to help understand the nature of the factors as opposed to understanding the variance composition of the variables.

Only 7 factors emerged from the orthogonal rotation as being of appreciable importance. The remaining factors were too small in the proportion of variance accounted for to be considered further. The largest 12 factors are shown in Table 8 revealing the negligible character of the last 3 factors. Table 8 represents the final orthogonal rotated loadings for the 44 items on the 7 taxonomy factors. The sharpness of this factor structure was of

Table 7 Correlation Matrix

VAR	3	27	28	30	39	44	45	53	56	58	81	150	151	157	158	161	162	176	178	183	186	187	192	193	195	196	204	208	221	227	234	236
27	-2																															
28	6	9																														
30	-2	11	5																													
39	24	-2	7	2																												
44	7	1	5	13	11																											
45	13	5	0	9	16	-10																										
53	3	12	6	17	13	5	3																									
56	18	14	6	7	11	3	16	-3																								
58	1	36	13	7	-7	8	-3	10	11																							
81	-13	27	4	5	-2	5	2	2	10	26																						
150	3	5	3	7	4	-10	8	5	17	10	5																					
151	4	3	6	5	16	9	9	0	5	11	9	26																				
157	4	9	4	4	19	-10	28	7	20	6	2	2	5																			
158	9	7	7	22	7	14	6	19	10	14	15	11	14	11																		
161	12	15	19	7	12	16	4	-3	20	25	7	7	16	0	10																	
162	12	12	15	4	5	27	-3	2	11	17	4	-6	5	7	16	18																
176	-1	5	4	11	0	9	8	28	9	10	5	3	18	14	21	6	11															
178	3	13	7	-5	4	35	-7	5	-2	19	12	-4	4	-2	4	14	33	12														
183	6	0	-9	-3	11	2	-4	4	19	5	8	26	23	5	4	15	2	20	5													
186	12	2	1	6	15	4	8	9	20	7	11	36	31	1	11	8	-3	13	-10	37												
187	10	6	-2	11	11	2	27	6	16	8	7	13	14	20	21	13	14	15	9	9	10											
192	12	8	15	0	10	9	11	19	19	13	0	11	11	15	24	23	16	10	17	17	11	21										
193	5	9	12	9	14	21	4	7	8	11	4	-1	14	0	9	13	27	8	27	4	0	10	13									
195	20	1	4	10	24	8	20	8	16	-1	-2	11	2	17	12	-1	13	5	11	10	5	21	7	17								
196	22	7	7	4	25	1	10	17	20	9	-4	19	10	15	21	7	11	16	4	16	12	16	19	10	23							
204	27	6	1	5	28	0	10	2	23	1	1	10	4	15	15	7	6	2	1	21	13	11	12	0	37	33						
208	12	9	8	8	16	10	11	16	19	11	-1	20	18	12	16	13	16	15	9	13	25	11	9	14	17	17	17					
221	2	4	-9	15	9	-1	14	23	3	8	3	11	12	38	23	3	7	24	4	11	8	18	6	7	13	20	12	22				
227	15	3	3	7	15	2	12	14	21	9	5	17	16	15	16	7	9	10	9	17	19	20	18	9	22	28	20	21	13			
234	29	9	-2	4	27	8	12	-2	20	6	-6	16	3	10	13	11	9	11	12	15	12	15	13	17	42	31	41	19	12	20		
236	10	4	4	16	7	9	9	30	0	0	-2	7	6	7	34	1	13	29	6	2	4	14	17	15	12	25	11	15	19	19	19	
250	9	1	23	1	0	9	1	-4	6	11	-2	1	7	3	5	16	9	11	14	4	-2	10	22	17	8	7	4	2	2	4	11	9
273	16	7	-1	8	25	5	25	13	12	-1	5	12	17	32	15	8	4	15	6	20	12	20	11	6	25	24	24	22	28	25	26	21
307	8	-4	-3	-2	7	-12	25	-4	8	1	-1	7	0	31	7	6	-1	6	-12	11	9	15	6	-6	15	14	23	16	28	16	21	12

VAR	250	273
273	1	
307	1	29

Table 8 Rotated Orthogonal Factor Matrix

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
234	70	07	09	11	01	07	04	-00	04	-04	-07	24
204	61	09	-04	14	03	03	01	-03	05	01	00	-07
195	53	-02	15	17	-04	05	-05	11	11	17	01	03
196	41	11	-06	09	02	29	15	-05	32	04	04	01
3	40	06	08	04	-12	-01	19	02	06	-03	13	-10
124	37	12	10	13	03	02	14	07	30	06	-05	01
39	34	14	12	17	-13	01	-03	-00	15	07	38	03
56	29	22	-01	14	18	-11	19	11	11	06	00	-13
100	22	02	19	10	11	07	-07	-03	58	-03	12	07
227	22	21	05	16	03	-13	04	02	38	03	-03	-06
186	14	65	-06	-02	03	05	-04	06	07	-00	03	-17
151	-07	55	13	12	02	05	11	06	06	-05	06	15
183	18	53	03	05	04	06	-00	-27	-02	21	-15	-18
150	14	48	-18	01	07	08	04	09	11	01	-08	06
110	02	42	06	12	15	05	15	00	00	04	13	10
208	22	27	16	15	07	18	02	05	09	-18	06	-12
162	10	-05	57	04	11	05	15	04	11	-10	-05	-19
178	05	-05	54	-06	23	05	07	-22	11	13	-05	18
44	06	06	52	-12	01	06	03	07	-04	08	04	07
129	-02	-06	47	06	08	07	21	05	05	-00	02	-18
193	10	05	41	00	03	08	13	08	10	-02	07	17
157	10	-03	-06	61	10	11	05	-03	07	05	08	-06
307	24	04	-13	50	-01	06	01	-06	05	-06	-16	-13
221	06	10	07	49	08	38	-11	-02	00	-09	-06	01
45	11	05	-08	46	-03	-04	08	24	09	09	10	05
121	10	14	04	44	-11	-08	05	06	12	-06	03	31
273	28	16	07	43	02	17	-04	-01	12	12	08	04
187	09	13	11	33	05	06	13	20	14	20	-10	05
27	06	00	01	01	60	06	06	08	03	-08	14	11
58	00	08	13	-02	56	09	19	-00	04	-09	-03	-02
142	-07	03	08	08	48	-03	16	-10	02	10	-10	-08
81	-07	11	06	00	47	-03	-09	11	04	11	-06	-02
140	-02	11	23	04	29	10	27	01	-02	-03	-03	-11
53	-01	03	02	00	08	62	-04	06	05	12	27	-08
236	14	01	09	07	-11	55	09	18	10	-01	-10	06
176	-01	18	14	15	07	43	08	-03	01	08	-08	02
158	12	09	12	08	12	36	12	32	15	03	-20	-05
89	17	09	07	12	04	30	11	12	04	51	07	-03
30	03	04	07	06	09	22	-01	37	-05	06	03	00
250	05	01	15	04	00	05	44	-07	-03	02	-08	13
28	01	-03	07	-06	10	04	41	06	02	-02	15	-06
192	10	12	13	10	05	07	41	-01	23	10	-13	-02
161	09	20	19	05	22	-08	39	01	-01	02	04	-02
97	18	24	-01	06	23	05	31	12	-12	06	-05	01

Table 9 Rotated Oblique Factor Pattern Matrix

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
100	63	12	-03	03	-01	11	-10	05	-04	-00	-08	05
227	42	-01	12	04	06	-05	-01	-05	07	02	02	-10
196	37	00	01	22	-02	-16	13	-06	08	24	09	01
124	32	-10	03	-09	02	02	08	00	10	20	04	-10
27	03	65	-01	07	-01	-03	01	15	-06	10	05	06
58	05	54	03	07	-01	04	13	-04	-09	02	-01	09
81	02	45	07	-08	-03	05	-17	01	13	-06	-09	-09
142	02	44	-04	-06	10	02	11	-17	10	-09	-06	-02
186	05	-03	60	00	-09	-12	-14	-12	05	00	14	-17
151	04	-02	59	02	06	14	08	09	-03	-08	-02	02
150	11	04	44	01	-08	-20	00	01	05	13	-09	-06
183	-01	-03	43	01	04	04	05	-42	21	12	-03	04
110	-02	13	42	04	06	05	10	03	07	-03	08	09
208	09	04	23	13	13	07	-05	-02	-14	10	18	-20
53	03	08	-01	62	-04	-06	-06	05	17	-13	18	02
236	10	-15	-03	45	01	02	10	12	04	14	-13	-20
176	01	01	13	36	14	10	08	-08	10	-02	-10	-05
158	13	04	01	20	-01	00	06	13	10	08	-16	-39
157	07	09	-10	05	58	-10	02	02	11	-05	11	04
307	-05	-04	-04	-02	52	-15	-00	-13	-01	18	-00	-12
221	01	05	06	32	51	06	-11	-01	-06	05	-06	-06
121	14	-10	18	-12	37	10	08	24	-04	10	-07	17
45	06	-03	03	-13	35	-10	03	28	18	-02	07	-03
273	12	-00	09	10	35	07	-09	00	18	13	10	06
178	14	20	-08	04	-05	56	06	-16	08	06	-08	15
44	-05	-02	06	03	-14	52	-03	03	08	05	06	-07
162	11	03	-11	-03	05	44	06	-08	-10	-04	13	-32
193	10	01	05	05	-05	39	10	14	-02	07	03	-00
129	03	01	-10	01	06	36	13	-05	01	-16	15	-24
250	-03	-04	00	02	03	12	47	-02	02	08	-07	04
28	-00	08	-05	04	-09	-04	38	07	01	-07	18	-05
192	25	-03	03	-03	03	01	38	-08	13	-03	-07	-11
161	-03	17	16	-12	02	11	32	-03	05	01	12	-06
140	-04	23	07	05	05	13	21	-08	-01	-07	06	-17
89	-00	-02	-04	19	-02	03	03	-01	61	01	05	00
187	12	-01	06	-09	22	08	07	12	27	-01	-11	-12
234	07	03	-01	01	04	12	03	03	-01	72	02	05
204	07	03	-03	-03	08	-08	-05	-10	06	48	19	-06
195	12	-05	-13	-05	06	13	-12	05	23	39	12	-07
39	15	-11	10	02	07	09	-03	10	12	10	41	16
3	05	-13	-00	-03	-01	-01	13	-02	02	23	29	-08
30	-10	07	03	13	-01	03	-08	27	14	03	-01	-23
56	10	14	12	-20	05	-11	09	-02	13	12	14	-16

Table 10 Rotated Oblique Factor Structure Matrix

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
100	64	12	06	09	13	20	-00	08	12	19	21	-06
227	49	05	23	12	21	03	07	-02	23	23	14	-21
196	49	03	16	26	16	-04	18	-02	27	41	23	-15
124	45	04	15	-01	17	09	17	03	26	37	19	-20
234	34	-01	13	05	20	13	11	05	19	24	20	-08
195	33	-06	01	04	20	14	01	09	34	50	26	-16
39	32	-11	17	05	18	11	04	14	22	29	47	05
27	09	61	08	08	03	06	11	11	06	05	08	-08
58	10	59	12	09	02	16	25	-08	04	-00	03	-23
142	04	49	05	-04	09	10	21	-19	14	-08	-04	-13
81	04	47	13	-03	-00	07	-05	-02	16	-07	-08	-15
140	05	34	14	10	07	23	32	-09	10	-03	10	-28
186	16	06	62	06	03	-11	-05	-13	18	16	18	-22
151	14	08	58	07	14	15	15	09	12	03	04	-08
183	13	06	50	05	13	02	04	-40	29	23	03	-07
150	18	09	49	05	05	-17	04	-00	19	23	-02	-13
110	11	20	46	07	14	08	18	03	20	07	12	-05
53	11	10	06	64	04	03	-03	11	25	-03	16	-13
236	22	-09	06	52	13	11	12	17	20	21	-04	-30
176	13	09	21	42	20	16	14	-04	23	06	-06	-20
158	25	14	13	31	12	11	16	16	28	18	-05	-49
157	22	09	03	09	61	-06	06	09	24	11	15	-06
221	18	07	15	37	54	07	05	05	14	15	-01	-17
307	12	-03	06	01	54	16	02	-08	13	27	05	-14
273	33	02	21	17	46	08	00	07	34	31	19	-08
45	18	-02	12	-06	43	-09	06	32	28	14	13	-08
121	25	-09	22	-08	43	08	10	27	10	21	02	10
187	26	08	18	03	33	12	16	16	38	15	-00	-23
178	21	26	-03	08	-03	60	20	-15	11	05	-00	00
44	06	06	06	10	-12	53	11	03	11	05	11	-15
162	21	15	-05	07	06	52	23	-07	01	03	21	-39
129	12	13	-05	09	06	44	26	-03	08	-08	18	-31
193	21	08	09	11	01	43	21	14	09	12	12	-12
250	05	05	05	02	05	20	48	-02	09	10	01	-07
192	32	10	15	03	13	14	44	07	25	12	05	-24
161	09	28	23	-08	07	20	43	-04	17	09	19	-19
28	04	15	00	04	-06	08	40	06	07	-03	21	-14
97	01	27	28	02	09	01	33	02	25	22	08	-23
89	17	06	11	28	13	09	13	05	64	16	12	-17
3	21	10	07	-01	08	04	19	-00	13	34	38	-14
204	29	01	11	01	21	-06	03	-08	22	58	32	-15
208	25	10	29	19	21	12	06	-00	06	23	26	-29
56	24	20	24	-13	16	-04	20	-01	26	26	24	-25
30	01	11	08	21	06	07	-01	29	22	05	02	-28

Table 11 Correlations Among Factors

	I	II	III	IV	V	VI	VII
I	1.00						
II	.04	1.00					
III	.16	.14	1.00				
IV	.11	.03	.06	1.00			
V	.24	.02	.14	.07	1.00		
VI	.15	.13	-.00	.11	-.02	1.00	
VII	.10	.18	.11	-.00	.06	.22	1.00

course, achieved after 7 factor analyses in which the factors and the variables defining them had been carefully refined to produce a very sharp factor structure.

Although the orthogonal solution presented a sharp factor structure, oblique solutions were attempted to better approximate the ideal of simple structure. According to Thurstone (1947), a factor matrix approaches simple structure when each factor is loaded highly by only a few variables (the rest loading essentially zero) and each variable loads highly on only one factor. In general, oblique rotational solutions, in which factors are permitted to be correlated with each other, appear to be better representations of simple structure than the orthogonal solutions. However, in using oblique solutions the researcher has the disadvantage of generating a more complex hypothesis concerning the nature of his factors, since such hypothesis must take into account both the common variance among variables loading high on a factor, and the variance common among factors.

In order to rotate the initial factor axes to best summarize any clustering of variables, various levels of obliqueness have to be arbitrarily explored. The SPSS program allows the analyst to control the obliqueness of the solution by inserting different arbitrary values (controlled by DELTA) ranging from extremely oblique, to fairly oblique, and to less oblique solutions. The researcher used in his oblique rotational method the following 6 values of DELTA, -.5, -.4, -.3, -.2, -.1, and 0. The value of DELTA which best fits the data is the -.5 value, which represents the most oblique (least correlated) of the 6 solutions. Table 9 shows the rotated oblique - factor pattern matrix for the 44 items on the taxonomy of 7 factors.

Table 10 shows the rotated oblique - factor structure matrix for the 44 items. The structure matrix represents the correlation between factors and variables, and the pattern matrix represents the weights to estimate variables from factors. The pattern matrix delineates more clearly than the structure matrix, the

grouping of variables. The square of a pattern coefficient represents the direct contribution of a given factor to the variance of a variable. However, because of the correlations between factors, the communality of a variable consists of direct as well as joint contributions. Therefore, the total variance of a variable accounted for by a factor is not given by the sum of direct contributions. The structure matrix, on the other hand, consists of correlation coefficients. The total variance of each variable, calculated by the square of the correlation coefficient is not identical to the total direct contribution given by variables in the pattern matrix.

6.6 Results

Each of the 7 rotated factors is presented in the following tables together with a brief description and the item variables with loadings of 0.3 or more in either the orthogonal solution or in the oblique solution.

FI Sociability v Aloofness (A)

Individuals who are high on this factor tend to be easy going, warmhearted, outgoing and attentive to people. They believe that others wish them well, and they have faith in human nature. Individuals low on this factor tend to be detached, aloof, reserved and critical.

Table 12 Variables with Loadings of .3 or more on Factor A

Variable	Orthogonal	Oblique
3. I like mixing with other people at work	.40	.05
39. I find it easy to enjoy myself socially at work	.35	.15
100. I like cracking jokes and telling funny stories to friends at work	.22	.63
124. I would call myself a happy-go-lucky person at work	.37	.32
195. I believe that I am quite popular at work	.53	.12
196. At work, I usually make an effort to keep other people cheerful	.41	.37
204. I believe that my manner at work is friendly	.61	.07
227. When newly introduced to people, I try to put them at ease with jokes and good humour	.22	.42
234. I appear to have many friends at work	.70	.07

FII Dogmatism v Adaptability (B)

Individuals who are high on this factor tend to be rather rigid, unreceptive to new ideas, and respectful of established ideas. They also tend to be rather self-opinionated and lacking in empathy. Individuals low on this factor tend to be more open-minded, flexible and adaptable to new ideas.

Table 13 Variables with Loadings of .3 or more on Factor B

Variable	Orthogonal	Oblique
110. My advice to people is to be cautious - take time and think things over	.42	.42
150. I believe that to work effectively bosses must be obeyed and respected	.48	.44
151. I believe that there are 2 kinds of people at work: the responsible and the irresponsible	.55	.59
183. I believe that there is only one correct way of running things at work	.53	.43
186. I believe that rules must be followed strictly if work is to be efficient	.65	.60

FIII Aggression v Accommodation (C)

Individuals who are high on this factor tend to be dominant and competitive, rather hard, independent-minded, attention-getting and prove to be unscrupulous. Individuals low on this factor tend to be accommodating, soft-hearted, and rather dependent.

Table 14 Variables with Loadings of .3 or more on Factor C

Variable	Orthogonal	Oblique
44. I have had some quarrels with people at work	.52	.52
129. I sometimes get cross at work	.47	.36
162. Once in a while at work I lose my temper and get angry	.57	.44
178. I have been or nearly been in a fight at work	.54	.55
193. I have sometimes told lies to people at work	.41	.39

FIV Stability v Instability (D)

Individuals who are high on this factor report being calm, and stable in mood. They tend to be self-assured, and to have confidence in themselves. Individuals low on this factor tend to be apprehensive, worrying, and rather guilt prone and self-reproaching.

Table 15 Variables with Loadings of .3 or more on Factor D

Variable	Orthogonal	Oblique
45. I am usually calm and not easily upset at work	.46	.35
121. I can take kidding or teasing at work without getting upset	.44	.37
157. My mood at work does not often go up and down	.61	.58
187. I believe that people at work consider me a predictable person	.33	
221. I don't often feel 'fed up' at work	.49	.51
273. My spirits at work generally stay high, no matter how much trouble I meet	.43	.35
307. I rarely get annoyed in company	.50	.52

FV Tension v Relaxation (E)

Individuals who are high on this factor tend to be tense, frustrated, overwrought and rather shy and sensitive. They tend to function poorly in interpersonal situations. Individuals low on this factor tend to be relaxed, tranquil, meet strangers easily and speak before groups with little fear.

Table 16 Variables with Loadings of .3 or more on Factor E

Variable	Orthogonal	Oblique
27. I usually feel uncomfortable when having to mix with a new group	.60	.65
58. I often feel self-conscious when talking to supervisors at work	.56	.54
81. Starting conversations with strangers at work is usually rather difficult for me	.47	.45
140. I am slow to trust people at work	.29	.23
142. I am easily embarrassed when people watch me work	.48	.44

FVI Dominance v Submissiveness (F)

Individuals who are high on this factor tend to be independent-minded, good organisers and leaders. Individuals low on this factor tend to be submissive, dependent individuals who prefer to avoid responsibility and decision-making.

Table 17 Variables with Loadings of .3 or more on Factor F

Variable	Orthogonal	Oblique
53. I like to organise people at work	.62	.62
89. I believe that I have the ability to inspire people to work better	.30	.19
158. I like doing jobs in which I have to act quickly	.36	.21
176. I would rather work with several people under me than in a team	.43	.36
221. I don't often feel 'fed up' at work	.38	.32
236. I enjoy having responsibility at work	.55	.45

FVII Depression v Elation (G)

Individuals who are high on this factor report having inferiority feelings, are depressed and pessimistic. They tend to be slow in movement and rather introspective. Individuals low on this factor tend to be optimistic, quick and alert, and rather carefree.

Table 18 Variables with Loadings of .3 or more on Factor G

Variable	Orthogonal	Oblique
28. My future at work looks very dismal	.41	.38
97. There is little chance for promotion in my job unless I get a lucky break	.31	.26
161. It seems to me that most people in positions of authority are not really interested in the problems of the average man	.39	.32
192. I believe that the situation of the average man is getting worse, not better	.41	.38
250. I often feel listless and tired at work for no good reason	.44	.47

6.7 The psychometric data for the OPSCI scale and subscales are presented in the following table.

Table 19 Characteristics of the OPSCI Scale and Subscales

Scale or Subscale	Number of Items	Scale Mid-point	Mean	Standard Deviation	Coefficient Alpha	Mean Item-Whole Correlation
Total OPSCI Scale	35	35	39.77	6.84	.66	.48
Sociability v Aloofness	5	5	8.06	2.08	.94	.53
Dogmatism v Adaptability	5	5	6.67	2.65	.89	.53
Aggression v Accommodation	5	5	4.86	3.21	.90	.50
Stability v Instability	5	5	6.99	2.43	.80	.50
Tension v Relaxation	5	5	3.43	2.77	.67	.48
Dominance v Submissiveness	5	5	5.55	2.75	.84	.45
Depression v Elation	5	5	4.20	2.49	.73	.39

It can be seen that the coefficients of internal homogeneity, as represented by mean item-whole r, and alpha coefficients (Kuder-Richardson 20) are reasonably good in all cases. In interpreting the results, it should be noted that in unitary factor scales, the items are not designed to replicate the contribution of other items, but rather contribute as much specific variance as possible to the factor which is different from the specific variance of any other item.

The mean scores for the sociability-aloofness and the stability-instability scales indicate positively skewed distributions with mean scores located towards the end point of the scales. The sociability-aloofness scale produced a mean score of 8.06 with a standard deviation of 2.08, and, accordingly, this scale contained the most unsatisfactory score distribution. At this stage of the research, the author was obviously reluctant to omit this scale from the final version of the OPSCI as factor A accounted for 33.9% of the total variance. The author also considered that the 5 items which made up the scale were conceptually sound in that they did not appear to be necessarily generating socially desirable responses. It was, therefore, decided to retain the scale in the final version pending a further examination of the scale score distribution on the second sample.

The response patterns for the revised 35-item scale were then inspected and compared with the response patterns for the 309-item scale. The response distributions for both scales are listed in Table 20 below, and overall the response patterns are very reassuring. The one individual who had a high number of "yes" responses on the 35-item scale (82.8%) had a very normal distribution of responses on the 309-item scale (ie 145 "yes" responses; 139 "no" responses; and 25 "in between" responses). The 5 individuals who had under 10% "yes" responses on the 35-item scale, all had over 50% "in between" responses. Of the 5 individuals who had under 10% "no" responses on the 35-item scale, 3 perhaps revealed a tendency-to-agree set on the 309-item scale (eg 53 "no" responses to 132 "yes" responses; 74 "no" responses to 185 "yes" responses; and 64 "no" responses to 111 "yes" responses). It should also be remembered that the low level of "in between" responses reflects the scale questionnaire instructions which asked respondents to "try not to fall back on the middle 'uncertain' answers except when the answer at either end is really impossible for you".

Table 20 Distribution of Responses

%	"Yes" Response		"No" Response		"In Between" Response	
	35-Item Scale	309-Item Scale	35-Item Scale	309-Item Scale	35-Item Scale	309-Item Scale
91-100	0	0	0	0	0	0
81-90	1	0	0	0	0	0
71-80	3	1	0	0	1	0
31-70	333	305	213	367	78	83
21-30	51	77	140	34	78	77
11-20	11	20	46	3	79	127
0-10	5	1	5	0	168	117

6.8 Discussion of the Results

The orthogonal solution (Table 8), the oblique factor pattern solution (Table 9), and the oblique factor structure matrix (Table 10) all agree rather well in showing that in most cases the variables had major loadings on the factors they were expected to define and not elsewhere. Moreover, it does appear

that 7 usable factors can be extracted accounting for in total 84% of the variance.

Factor A was the only factor which exhibited rather different loadings in the orthogonal and the oblique solutions. Five variables (3, 39, 195, 204 amd 234) which loaded highly in the orthogonal solution had a minimal loading in the oblique solution. The consequence for factor interpretation was that the orthogonal solution revealed what appeared to be a "sociability" factor, and the oblique solution produced a factor which appears to be more concerned with "carefreeness". Only 2 variables (124, 196) had reasonably good loadings in both solutions.

Factor B appears to be concerned with "dogmatism". Both the orthogonal and oblique solutions provided good loadings on the same variables. Factor C seems related to "aggression", and the orthogonal solution provided consistently higher loadings on all 5 variables. Factor D appears interpretable as a "stability" factor. The orthogonal solution provides higher loadings on nearly all variables. Factor E which seems related to "tension", did not produce a high loading as expected from V140 "slow to trust people at work". The loadings were .29 and .23 in the orthogonal and oblique solutions respectively. Factor F appears related to dominance, organisation and leadership qualities, and Factor G seems concerned with "depression". The orthogonal solution provided a sharper clustering of variables in both cases.

Factor A accounted for 33.9% of the total variance; Factor B accounted for 14.5%; Factor C for 9.9%; Factor D for 8.5%; Factor E for 7.0%; Factor F for 5.4%; and Factor G for 4.8%.

Overall, the oblique solution seems to give very little more than orthogonal solution in the way of useful information. The orthogonal solution provides sharper grouping of variables in nearly all factors.

Interestingly, the nature of 6 OPSCI factor traits corresponds closely to the psychological meaning of 6 primary source traits identified by Cattell. Table 21 outlines six 16 PF factors which appear to correspond closely to 6 OPSCI factors. OPSCI factors A, B, D and E seem to have a congruent psychological meaning to 16 PF factors A, L, C and Q4 respectively. OPSCI factors F and G are more loosely related to 16 PF factors E and O respectively. The 16 PF factor E (dominance v submissiveness) has a wider psychological meaning than the OPSCI factor F in that it incorporates an "aggressive" element which was represented in the OPSCI analysis by a distinct factor. The 16 PF factor O (guilt proneness v untroubled adequacy) tends to have a more specific meaning than the OPSCI factor G in that it appears related to apprehensive, self-reproaching, worrying, troubled behaviour whereas the OPSCI factor G represents a more general pessimistic attitude about life. As has already been indicated, the OPSCI factor C (aggression v accommodation) does not correspond directly with any 16 PF factor, but it seems absorbed by the 16 PF factor E (dominance v submissiveness).

However, at this stage of the study, it is difficult to determine the significance of the similarity between the factors identified by the author and Cattell. It may be argued that the findings of the present study provide support for Cattell's view that he has identified the 16 primary source traits of the human personality. It can, however, not be assumed that any given individual will generate similar profiles on the OPSCI and 16 PF scales. It has already been emphasized that the same situation can evoke different behaviours in different people, and that different situations can evoke seemingly similar behaviours in one person. In other words, the OPSCI is designed to measure role-specific work behaviour, and aims precisely to measure an individual's self-perceived impact on and relations with others at work. To demonstrate that the OPSCI is not measuring role-specific behaviour, the OPSCI and 16 PF scales would need to be administered in parallel to a large sample with work experience.

Table 21 Description of Corresponding Factors

Factor	OPSCI Description	Factor	16 PF Description of Corresponding Factors
A	Sociability v Aloofness	A	Affectothymia (outgoing, warmhearted) v Sizothymia (reserved, detached)
B	Dogmatism v Adaptability	L	Protension (suspicious, self-opinionated) v Alaxia (trusting, adaptable)
C	Aggression v Accommodation		
D	Stability v Instability	C	Higher Ego Strength (stable, calm, mature) v Lower Ego Strength (less stable, easily upset)
E	Tension v Relaxation	Q4	High Ergic Tension (tense, frustrated) v Low Ergic Tension (relaxed, tranquil, unfrustrated)
F	Dominance v Submissiveness	E	Dominance (assertive, aggressive, stubborn) v Submissiveness (humble, mild, conforming)
G	Depression v Elation	O	Guilt Proneness (apprehensive, troubled) v Untroubled Adequacy (self-assured, confident)

6.9 Discussion of Validity

The concept of validity is a vexed one in relation to personality variables because the notion of "agreement with a criterion" is clearly inapplicable as no agreed criterion exists in the usual case. Also, a whole factor is rarely to be accurately represented by any single, concrete piece of behaviour. Any quite specific behaviour is usually the result of several factors acting together. This, in effect, would mean that in order to get an appropriate validity criterion we would have to add together the scores of several concrete performances (chosen for their discovered substantial loading with the factor) to get the single factor score. In other words, we would have to 'sample' the trait from many of its areas of expression to get a relatively unbiased score. Furthermore, correlations between ratings and scores on personality inventories are contaminated by (a) the manner in which the variable being rated is defined, (b) the degree of complexity of the variable being rated, (c) the amount of insight knowledge, and ability of the subjects doing the ratings, and (d) the extent to which the individual doing the ratings is influenced by standards of social desirability.

Therefore, validity of the OPSCI relies only on content and construct validation. The OPSCI instrument requires content validity in that the inventory must stand by itself as an adequate measure of what it is supposed to measure. It has already been argued that there are enormous difficulties in validating instruments in terms of correlations with other behaviours because of the difficulties in determining what behaviours might serve as adequate criteria. Therefore, content validity should be ensured by the plan and construction of the inventory; a representative collection of items needs to be developed and an appropriate method of test construction used.

However, in practice it is very difficult to sample in the strictest sense of the word items for an inventory which is designed to measure the occupational persona. In fact, what tends to happen is that a collection of items is formulated which broadly

represents the area of investigation. In such cases, it is necessary to outline or approximately define the kinds of behaviour for which items need to be generated, and how this is done contributes very importantly to the content validity of the instrument. In the development of the OPSCI, items were generated to represent as fully as possible, the range of interpersonal response traits likely to be manifested in the work situation (see section 6.1). To recapitulate section 6.1 briefly, items were derived from a questionnaire asking a sample of individuals to describe agreeable or disagreeable behaviour which they had experienced at work; important constructs were located through a consideration of other personality tests and thepublished works of other investigators in the field. In such a way, the author identified 29 conceptually distinct categories of behaviour. Some items were adapted from existing instruments to represent these categories, but the largest proportion of items were developed on an intuitive basis to represent these categories.

However, another problem in the sampling of content is that the identification of items to represent a particular construct usually involves questions of values. For example, values determine the relative stress on different types of content and, as people differ in their values, there usually tends to be some disagreement about the proper content coverage of particular inventories. It is therefore, relevant for the author to attempt to make explicit the particular values underlying the construction of the OPSCI measure. Firstly the items representing behaviour exhibited by individuals at work were constructed as instances of role-specific behaviour. The items were designed to elicit self-constructs in that it is not work situations as such that evoke behaviour but how the individual construes his work situation. Also very importantly, the author constructed items which were designed to identify individuals who may be prone to generating interpersonal dissonance in the work situation.

In the final analysis, because of these types of problems, attempts to ensure content validity tend to resort to appeals to

reason with regard to the adequacy with which the content has been sampled, and the adequacy with which the inventory items represent the content. Some circumstantial evidence can also provide support for an inventory's content validity. For example, each scale would be expected to have a certain internal consistency. It can be seen from Table 19 that the coefficients of internal homogeneity for the OPSCI are reasonably good in all cases.

Because, it could be argued that the content or relevant behaviour which the OPSCI scales are designed to measure might be somewhat debatable, the OPSCI also relies on construct validation. Construct validation is involved when the variables to be measured are abstract rather than concrete, and are not able to be operationally defined. A construct, therefore, does not exist as an isolated, observable piece of behaviour, and no criterion is accepted as entirely adequate to define the quality to be measured.

In the first instance, constructs vary widely in the extent of the magnitude of the area of related observable variables. The larger the domain of observables related to a construct, the more difficult it tends to be to define which variables do or do not belong to the domain. Indeed, the domain of related observables may be somewhat blurred and the researcher may not be sure of the full meaning of his own constructs. In practice, the researcher tends to have a belief about some prominent observables but beyond that he can only conjecture as to how far the construct extends, because the researcher has no precise method for outlining the domain of variables for a construct. Instead, outlining a construct usually consists of an intuitive theorizing process and an attempt to define what one means by the use of particular labels. In such a way the word denoting the construct is related to other words only at a lower level of abstraction. However, unless a domain is well specified there is no way in which a test can be adequately constructed to measure the construct. In the present study the domain for the occupational persona construct is the full range of interpersonal response traits likely to be manifested in the work situation.

It is necessary to evaluate construct validity by integrating evidence from many sources, and these methods of investigating construct validity involve correlations. Many different types of evidence could contribute to a test's construct validity. For example, if our understanding of a construct leads us to expect two groups to differ on the test, this expectation may be tested directly; or if two tests are presumed to measure the same construct, a correlation between them would be expected. The stability of test scores over time may also be relevant to construct validity, although whether a high degree of stability is encouraging or discouraging for the proposed interpretation depends upon the theory defining the construct. In such a way, a network of associations can be established by a series of correlational studies which contribute to the construct validity of an instrument.

However, it should be noted that a weakness of the evidence from correlational studies rests on the following logical fallacy. The circularity in this logic can be illustrated in the following way:

1. A construct and B construct correlate positively.
2. C is a measure of construct A.
3. D is a measure of construct B.
4. C measure and D measure correlate positively.

The problem is that although propositions 1 and 4 may be true, they do not provide 'proof' for propositions 2 and 3. Propositions 2 and 3 are based on certain assumptions. Such assumptions are often based on strong appeals to common sense in the absence of supporting empirical evidence. In the domain of personality measurement, assumptions of this nature are often made between a test and certain observable behaviours. Such assumptions seem quite acceptable to the author when the relationship between the two constructs is recognised as being generally beyond argument.

A further problem about this kind of supporting evidence is that it assumes that a construct has objective reality. However, it is

probably more defensible not to make claims for the objective reality of a construct name, but to think of the construct name as a useful way of labelling a particular set of observable variables. Such an approach thus implies that a construct name is only "valid" to the extent that it communicates what kind of variables are under investigation. However, personality constructs tend to have no specific associations with observable behaviours, and the researcher is often unsure of what observable behaviours should relate to the construct name. Therefore, it is not possible to logically prove that any set of observable behaviours measures a construct. Nevertheless, if a set of observable behaviours relate to a construct, this contributes to the proof that the construct has explanatory power and supports its usefulness as a guide to empirical reality.

Factor analysis is also a very important and necessary part of establishing construct validation. Factor analysis can be used to test hypotheses about the existence of constructs. For example, in the development of the OPSCI, the first stage involved developing items to measure particular attributes and the second stage involves correlating scores on these items. The subsequent analysis of these correlations will indicate which groups of items are dominated by specific factors. If several items correlate highly with a particular factor, this is evidence that the factor or construct has a strong internal structure. The factor analysis will also provide evidence with regard to the factor or construct's independence or association with other factors or constructs. Information relating to the internal structure of groups of items measuring constructs is essential evidence in the establishment of construct validation.

Cattell (1965) has argued that the construct validity of a factor, or the degree to which the test items are measuring the factor, can be calculated by what Cattell describes as the validity coefficient. The mean correlation of all single OPSCI items with the factors they represent is 0.48. The mean correlation of each group of items with the factor it represents is specified in

Table 19. It must also be remembered that in unitary factor scales items are not designed to repeat as closely as possible the factor composition of the previous items. Instead, each item must contribute as much variance as possible to the main unitary factor and impart a specific factor variance which is different from the specific factor variance of any other item. In this context the validity coefficients appear to be acceptable for so brief a test.

The author recognises that at this stage further data is necessary to contribute to the construct validity of the OPSCI instrument, and in particular, some evidence to relate the OPSCI scales to some observable criteria. The main study data, presented in Part 3, will provide such an opportunity for relating OPSCI scale scores to observable career pattern and demographic variables. Finally, the main study data will also permit inter-correlation between the items of the OPSCI and the Occupational Beliefs Index which may constitute further favourable evidence for the proposed OPSCI scale interpretations.

Summary

Part 2 is primarily devoted to a description of the construction of the Occupational Persona Self-Construct Inventory (OPSCI). At the beginning of this section, there was also a consideration of the appropriateness of self-report techniques, a brief review of the self-theory underlying the occupational persona and a summary review of research related to the development of instruments for measuring personality traits at work. The major part of this section was devoted to a detailed presentation of the construction of the OPSCI.

PART THREE

METHODOLOGY AND RESULTS

7. Design of the Main Study

7.1 The following sections discuss the design of the study and the research methodology, and include a description of the sample, the procedure, the research questionnaire and methods of data collection.

The design of this study was essentially exploratory. The aim of the research was to inductively explore the relationships between occupational beliefs, the occupational persona and occupational behaviour, and examine the empirical implications for the author's occupational belief systems model of occupational choice and occupational behaviour. The second objective of the study was to descriptively examine the personal, educational and work history correlates of the newly developed Occupational Persona Self-Construct Inventory (OPSCI) described in Part 2. A third objective was to examine the usefulness of the Occupational Beliefs Index (OBI) as a measure of work orientation.

7.2 In order to examine the relationships between the occupational persona, occupational beliefs and occupational behaviour, an appropriate research methodology had first of all to be developed. Tull and Albaum (1973) have made distinctions between four different types of approaches to research problems. These are the 'objectivist' method, the 'subjectivist' method, the 'Bayesian' method, and 'phenomenology'. The 'objectivist' or 'scientific' method involves the making of predictions based on a hypothesis, devising a test of the hypothesis, and rejecting or failing to reject the hypothesis based on the test results. The 'subjectivist' method also involves the development and testing of hypotheses but predictions need not be limited to overt behaviour. The researcher's personal interpretation is tolerated more and analysis may be based on descriptive and inferential statistics. The fundamental assumption of the subjectivist approach is that social science must take account of meaning and purpose in its analysis of human behaviour.

The 'Bayesian' method involves the development of prior judgements which are expressed as probabilities and then revised as a result of testing these probabilities. Finally, the phenomenalist approach develops explanatory hypotheses in the form of pre-conceived conceptual frameworks. In other words, the phenomenon is described theoretically, data is collected about the identified elements, and then an attempt is made to understand the relationships involved.

The 'objectivist' and 'subjectivist' methods of developing a series of hypotheses are clearly inappropriate in a quasi-experimental study of this nature. It was similarly considered that the Bayesian method was less appropriate than the phenomenological approach. In other words, the phenomenon - occupational choice and occupational behaviour - can be described theoretically (eg the occupational belief system model) and the data can be collected about the identified elements before an attempt is made to understand the relationships involved. Of course, the disadvantage of the phenomenological approach is that it tends to preclude an interpretation of the data in terms of firm mathematical concepts. The approach also often necessitates the development of rather complex research instruments in that data usually needs to be collected about several more elements than is ordinarily required from an objectivist or subjectivist approach. However, the author considered that in this study the amount of data which needed to be collected would not necessitate the development of a research instrument which was unreasonably long.

7.3 The phenomenalist research model used in this study is both an inductive, and a descriptive cross-sectional model. The inductive model involves the logical reasoning from particular individual cases to general conclusions, and the cross-sectional method is concerned with studying several variables as they are at a single period of time. The rationale for a descriptive study, according to Fox (1969), is that "the information provided is in itself the answer to the research question posed" (p 423). The usual limitations of a static-group comparison design are that the

questionnaire responses may only have short-term significance. However, these limitations will be reduced by the use of longitudinal criteria of occupational behaviour.

7.4 The following section describes the development of the questionnaire to be used in the main study. First of all, the questionnaire was designed to include the Occupational Persona Self-Construct Inventory (OPSCI) developed by the author specifically for this study, and details of its development are outlined in Part 2. The OPSCI is designed to describe in quantified terms, a person's self-perceived impact on and relations with others at work. The final version of the OPSCI contains 35 items measuring seven different scales with 5 items contributing to the score on each scale. The seven scales have been described as follows: sociability-aloofness; dogmatism-adaptability; aggression-accommodation; stability-instability; tension-relaxation; dominance-submissiveness; and depression-elation.

Each item was answered by using one of the following 2 scales:

Scale X : (a) True (b) In Between (c) False
Scale Y : (a) Yes (b) In Between (c) No

Scale scores were produced by summating the 5 item scores where a 'true' or 'yes' response was assigned the value 2, an 'in between' response assigned the value 1, and a 'false' or 'no' response assigned a 0 value. The value 2, therefore, always contributed positively to the first-named poles above on each bipolar scale dimension.

However, this final version of the OPSCI, of course, is not above criticism. For example, one of the OPSCI scales (sociability-aloofness) was not as psychometrically acceptable as one would have liked. The author was also apprehensive that 5-item scales, although attractive as they are in their brevity, may not be robust enough to provide the instrument with adequate reliability.

7.5 The main study questionnaire was also designed to include the Occupational Beliefs Index (OBI) which again had been specifically developed by the author to be included in this study, and details of the OBI's development are presented in Part 2. The OBI is designed to measure an individual's occupational belief system or an individual's self-perceived view of the function work has for him in the context of other human activities. The different ways in which man is related to his work are referred to as work orientations. The OBI contains 12 items measuring 12 different orientations to work with one item only contributing to the score for each work-orientation. The 12 different orientations to work have been described as follows: existential, economic, affiliative, self-fulfilling, socially esteemed, socially obligated, power, political, security, achievement, altruistic, and self-identity.

Each statement of belief about one's orientation to work was answered by using the following Likert-type scale, which functioned to operationalize the notion of central and peripheral beliefs:

(a) Strongly Agree (b) Agree (c) Undecided (d) Disagree (e) Strongly Disagree.

The 'strongly agree' response was assigned a value of 5, the 'agree' response assigned a value of 4, and so on, with the 'strongly disagree' response assigned a value of 1. The values 5 and 4, therefore, always contributed to a positive orientation to work, and the values 2 and 1 contributed to a negative orientation to work.

If the respondents had 'strongly agreed' with at least 2 or 3 statements, they were asked to rank their first 2 or 3 beliefs in order of importance. If the respondents had not 'strongly agreed' with any statements, but they had 'agreed' with at least 2 or 3 statements, they were asked to rank their first 2 or 3 beliefs in order of importance.

A total Work-Orientation Index was also computed by summating the item value scores on all 12 items, and there was a supplementary statement designed to measure an individual's temporal orientation to work. The respondents were asked to indicate which of the following statements were true for them:

(a) My working life used to be better.

(b) My working life is as good now as it ever was or probably ever will be.

(c) I expect my future working life to get better.

The author was aware that the construction of the OBI imposed a framework on how individuals might make their judgements or evaluations about work. The OBI forces individuals to conceptualize jobs in terms of the 12 orientations provided rather than allowing them to use their own personal constructs. In some cases, the responses required may have been of a rather hypothetical nature. Therefore, it could be argued that Kelly's (1955) Repertory Grid Technique would have been an appropriate research method for this type of investigation. However, the problem with the Repertory Grid Technique, of course, is that the time taken to complete individual grids is so long that it is not a feasible alternative for this type of study. Consequently, the author decided to supply the respondents with the constructs, and thus allow the investigation to be based on a larger and more representative sample. Also by using a larger sample, the author was able to collect sufficient data to make more reliable group comparisons.

Another contentious issue relating to the construction of the OBI concerns the request for respondents to rate their most important three dominant orientations to work. It is clearly possible that for some individuals these choices might have been marginal, or three dominant work orientations may not have existed in any real sense. Nevertheless, the author was concerned that the Likert-type responses would not generate responses which were sufficiently sensitive to differentiate

between centrally held beliefs about work. For this reason, the author invited respondents to differentiate between their two or three most important work orientations.

7.6 A major problem on which the author now had to decide was how occupational behaviour was to be measured, and how these measures should be represented in the format of the questionnaire. There is a severe methodological problem in selecting criteria to evaluate occupational behaviour. Researchers have tended to use a mixture of subjective and objective criteria. In the subjective category, some typical criteria have been: satisfaction/dissatisfaction with present and past employment; reasons for leaving a job (by employee and/or employer); reports on the client's success or efficiency (by client and/or employer). Amongst the objective criteria have been length of tenure in jobs; number of jobs; salary; and specific occupational choice.

Most of these criteria are suspectible to criticisms, especially when used in isolation. For example, subjective self-ratings of satisfaction/dissatisfaction are often influenced by transitory circumstances, and rather lack longer term reliability. Employees also tend to be notoriously biased about reasons for leaving a job, and their interpretation often varies markedly from their employer's interpretation. Neither does an employer's rating of competence necessarily relate to occupational adjustment, and obviously different employers will use a different conceptual frame of reference in evaluating competence.

Objective criteria also can be misleading. For example, wages/salary depends on several factors, and would make comparisons unreliable. It is also difficult to interpret the number and change of jobs because a shift of job could either reflect discontent, inefficiency, initiative, ambition, or motivation. Furthermore, continuous employment in one job may indicate suitability, laziness or lack of opportunity. Also manual workers without special qualifications typically change positions and occupations a number of times during their working lives, for it is in the nature of such work that workers are easily released

when work is slack and easily hired when workers are needed.

Certainly it is reasonable to conclude that multiple criteria are better than a single criterion and that "criteria vary in importance from time to time, and place to place" (Rodger 1965) and that "in real life situations you have to take the criteria which you can get" (Davies 1950). Thompson (1965), however, in his contribution to the symposium "The Criterion Problem in Selection and Guidance" makes an important distinction between static and dynamic criteria. Static criteria results from the attempt to measure an individual's performance at a given point in time. Occupational behaviour measures, Thompson argues, need to be based on total work history, rather than on the performance at a given time. He does, in fact, refer to Super's idea of a 'career' model when looking for appropriate criteria. Occupational choice is increasingly seen as a developmental process, and therefore, any 'dynamic' criteria would need to look at the total sequence of jobs and patterns of movement and assessing how adequately the individual is coping with the development task of each stage.

Such dynamic criteria based on the 'career' model has been used by Lancashire and Cohen in an unpublished study while at the NIIP. In order to compare subjects in terms of career patterns, a ratio of vertical moves (shown by, for example, professional examinations passed and by promotion to positions of increasing responsibility) to horizontal moves (shown by faltering or changing direction) was computed for each subject. An index of less than one (where there were more horizontal to vertical moves) signified a pattern of faltering or changing. The author decided to adopt this ratio of vertical moves to horizontal moves as one of the criteria for evaluating occupational behaviour.

Tiedeman (1961) has also argued for a criterion based on work history, claiming that it is the only criterion, if occupational development is to be studied from an internal, genotypic frame of reference. Tiedeman argues that the 3 genotypic elements of a work history are (1) kinds of position chosen; (2) their

sequence; (3) the duration of stay in each. In other words, if the concept of 'occupational development' is accepted, our criterion must be based on a work record spread across our life. Therefore, this study also evaluated occupational behaviour in terms of career patterns, based on the data extracted from the 3 genotypic elements mentioned by Tiedeman. Miller and Form's (1951) four categories were used to analyze the work history, and were defined and applied by the author in the following ways:

(i) Stable work history, where the job or jobs in an individual's life have all been of at least 3 years' duration.

(ii) Unstable work history, where the job or jobs in an individual's life have all been under 3 years' duration.

(iii) Multiple-trial work history, where jobs of under and over 3 years' duration appear intermittently in an individual's work history.

(iv) Conventional work history, where a job of under 3 years' duration is followed by a job or jobs which have been of at least 3 years' duration.

The author explored various approaches for procuring this information from subjects, and developed different drafts for the research questionnaire. Fundamentally, the choice of method lay between inviting questionnaire respondents to analyze their own work history by using the classification systems described above, or inviting respondents to provide information about their entire work history with the author undertaking the necessary analysis. The first approach would obviously have been more convenient for the author, and it was considered that it would have reduced the amount of time needed to complete this part of the questionnaire. However, the questions developed by the author tended to be rather too complicated and they did not generate the belief that they would be completed with accuracy. Therefore, individuals were invited to provide information about their entire work history by listing their present or last job and working backwards. Information was specifically sought on the job title, name of employing organization, duration of employment and the reason(s)

for leaving each job. All this information was considered necessary to permit an analysis of the work history in terms of the career pattern classifications described on the previous page.

It was also decided to evaluate occupational behaviour in terms of occupational choice. Very straightforwardly, the respondent's current type of work was interpreted as the occupational choice. An individual's type of work was classified according to the most widely known scale developed by Edwards (1933). Occupations were grouped into categories with professional and senior management at the top, followed by line management, minor professional and technical workers. The third group consisted of commercial workers and workers in personal services followed by a skilled workers group, and a combined semi-skilled and unskilled group. Defining occupational choice by these occupational categories has the advantage of reducing the sample-specificity effects of being in one particular job at the time of the study. The allocation of jobs to these occupational groups was necessarily a rather subjective process.

A third and final measure of occupational behaviour was conceptualized in terms of an analysis of the reasons individuals give for leaving jobs. Respondents were asked to give the reason or reasons for leaving each job with the request to be specific about each reason given. The author considered an approach in which respondents would be invited to classify their reason for leaving a job in terms of one of, say, 6 pre-determined categories. However, the author was apprehensive that this request may appear unnecessarily complex, and consequently, reconciled himself to grouping the specific reasons given into categories at a later date.

7.7 Appropriate biographical questions had to be developed for the questionnaire. The author was interested particularly in the personal and situational correlates of the OPSCI, and so biographical questions were developed which generated information on the following variables: age, sex, marital status, number of

dependents, educational level, occupation, father's occupation, and employment status. The details of how these variables were coded are presented in Table 26, and the main study codebook which is reproduced in Appendix E. Information about work history was already being recorded to provide the data for analyzing career patterns.

7.8 The main feature of the main study questionnaire have now been discussed with the inclusion of the OPSCI, the OBI, four occupational behaviour measures, and selected personal data. Although the author was anxious to keep the length of the questionnaire down to a reasonable length, two final measures were included in the main study questionnaire. Firstly, Tausky's short 6-item Meaning of Work scale was added to the main study questionnaire. The Tausky scale shared similar objectives to the OBI, and it was essentially included in the research questionnaire as a safeguard in the event of the OBI being found to be a psychometrically unacceptable instrument.

Tausky developed his scale in 1968 to measure four possible orientations to work, which he described as instrumental, quasi-expressive and two levels of expressive orientation. The 6 items in the scale refer to whether the respondent would work if he had to andwhat types of job situation he would prefer. Tausky reported a Guttman coefficient of reproducibility of 0.91 for the 6-item scale, and he classified the scoring pattern of responses into the following four types where agreement (+) with more items indicated a more expressive orientation to work:

Table 22

	Items					
	1	2	3	4	5	6
Instrumental	-	-	-	-	-	-
	+	-	-	-	-	-
Quasi-Expressive	+	+	-	-	-	-
Expressive A	+	+	+	-	-	-
	+	+	+	+	-	-
Expressive B	+	+	+	+	+	-
	+	+	+	+	+	+

Tausky's scale was developed on a sample of 267 American males from unskilled, semi-skilled and skilled occupations only, and there is no data bearing on the validity of the scale. The prospects of reproducing a Guttman scale in the present study were already restricted by the limited size of Tausky's sample and the narrow range of his occupational groups, but the author was also concerned that Tausky's American version used certain language which was unsuitable for a British sample. Accordingly, the author decided to change the wordings in the description of the response alternatives to two questions, but left the other four response alternatives to Tausky's scale unchanged. The questions and response alternatives used in Tausky's scale, and the revisions made by the author, are presented in Table 23 overleaf. Where two pairs of response alternatives are tabled, Tausky's response alternatives always precede the author's revised response alternatives; and the symbol (+) after a response indicates the response which is positively orientated to work, and the symbol (-) indicates the response which is negatively orientated to the meaning of work.

The author recognized that the changes in wording for the two pairs of response alternatives were quite considerable, and also very probably changed the meaning of Tausky's response alternatives. The author basically considered that his revised wording for the first item provided an improved alternative in the context of assessing individual's attitudes to work. The word "welfare" was replaced by "unemployment benefit", and the words "job as a car washer" were replaced with "unskilled job". The author felt unhappy about specifying an unskilled job as it seemed likely that any particular job may be evaluated in a very idiosyncratic way, which would distort the meaning of this particular response alternative.

The author's revisions to the response alternatives of Tausky's fifth item were even more considerable than the first revisions. The words "truck driver" were replaced by "unskilled worker" rather than "lorry driver", and the words "bank clerk" were

Table 23

Questions and Response Alternatives	
1. If you were out of work, which would you rather do?	
Go on welfare (-)	Claim unemployment benefit (-)
Take a job as a car worker that paid the same as welfare (+)	Take an unskilled job that paid the same as unemployment benefit (+)
2. If by some chance you had enough money to live comfortably without working, do you think that you would work anyway, or would you not work?	
Would you not work (-)	
Would work anyway (+)	
3. Which kind of work would you rather have?	
Average pay from work that is looked down on by people you know (-)	
Low pay from work that is respected by the people you know (+)	
4. Is the most important thing about getting a promotion	
Getting more pay (-)	
Getting more respect from friends and neighbours (+)	
5. Which job would you choose if you could be sure of keeping either job?	
Better than average pay as a truck driver (-)	Better than average pay as an unskilled worker (-)
Less than average pay as a bank clerk (+)	Less than average pay as a manager (+)
6. If you could be sure that your income would go up steadily without getting a promotion, would you care about being promoted?	
No (-)	
Yes (+)	

replaced by "manager". The author was not convinced by the usefulness of Tausky's response alternatives which compared a manual job with a clerical job. It seemed to the author that an individual might legitimately express a preference for one of these jobs independently of the instrumental aspect of pay. The author's alternatives invited the respondent to compare the work of a better paid manual worker with a lower paid managerial worker. The author considered that these revised alternatives would allow the respondent to more transparently reflect his instrumental or expressive orientation to work.

The final question to be added to the main study questionnaire was a single item measure of job motivation. The author considered that such a measure would be useful for comparison purposes to facilitate, for example, interpretations of work orientation score patterns and it would also provide an interesting correlate of OPSCI scale scores. The measure to be used was a single item job motivation index developed by Patchen (1965). Patchen developed four job motivation indices which were designed to measure general job motivation. These four indices were the survivors from 22 indices which were tried as indicators of general job motivation. Patchen used a sample of just over 1000, and he has amassed some evidence to support the validity of his indices. Motivation as measured by supervisor's ratings, and deduced from absentee rates, and conjectured differences on the basis of occupational status have all positively correlated with job motivation index scores. Group motivation scores also followed a number of theoretical predictions on aspects of the work situation, such as perceived achievement opportunities, control of work methods and identification with one's own occupation. The responses to all four indices are recorded on a 5 point Likert-type scale, but the response alternatives are individually drafted for each of the four indices. In consequence, the use of the four indices was expected to occupy a further 2 pages in the research questionnaire booklet. The author was naturally concerned about the length of the questionnaire booklet which was already 6 pages in length.

Therefore, because the inter-index correlations for Patchen's four measures were all highly positive, and in the interests of keeping down the length of the main study questionnaire, only one index was incorporated as a measure of job motivation.

7.9 This section outlines the procedure adopted for the collection of data for the main study. It has already been outlined that the author was keen to sample a population representing a wide cross-section of occupational groups. To carry out this objective a number of individuals from various institutions had to be identified. Arrangements were made to collect data from samples from the Open University, the Polytechnic of Wales, the Manpower Services Commission's Employment Rehabilitation Centres and Jobcentres, Careers Officers and Nurses. The details of these data collection arrangements will be discussed in the following sections. The data collection for the main study was compiled over an approximate 8 month period from January to August 1980 while the author was registered at the Polytechnic of Wales.

(a) Open University Sample:

An essential prerequisite for completing the questionnaire was that the respondent had work experience. Therefore, Open University students, who nearly all have work experience, were an attractive source for subjects from wide ranging occupational backgrounds. In the author's capacity as a part-time Open University tutor he had direct access to his tutorial group. All members of the author's tutorial group were invited to complete the questionnaire, and they were also asked to invite one or two other individuals with work experience from their family or place of work to complete the questionnaire as well. There were no problems getting these questionnaires completed and the response rate was very high. The sample generally fell into the line management/technical, commercial/personal services and skilled occupational groups, with a few professional group members from individuals invited to participate by the Open University students. The age range was very mixed and the sex was quite evenly divided.

(b) The Polytechnic of Wales sample:

The Polytechnic of Wales run a number of day-release classes for individuals concurrently gaining work experience, and it was these individuals that the author aimed to sample. Students of engineering, mining, surveying and building were administered the questionnaire in four separate groups. The students were not forewarned of these sessions and so attended their classes for lectures in the normal way. There was no manifest resentment at this practice, and subsequently, when the students were invited to participate in the study, no student left the classrooms. The numbers in three of the classes ranged from 1 - and the engineering class consisted of approximately 0 students. The subjects in these groups were nearly all male but again there were very few problems in getting the questionnaire completed. Nearly all of these subjects fell into the line management/ technical occupational group but less desirably this group had a rather young age distribution. A 30-minute period was allowed for the testing session.

(c) MSC Employment Rehabilitation Centres:

The Employment Rehabilitation Centres were used to obtain samples of unskilled, semi-skilled and skilled workers. The managers of 6 Employment Rehabilitation Centres were initially approached to participate in the study. The managers at the Hillington (Glasgow) and Edinburgh Employment Rehabilitation Centres declined to participate but the four Centres at Bellshill (Lanarkshire), Preston, Cardiff and Port Talbot agreed to provide part of the sample. The sample was, therefore, compiled from individuals resident in England, Scotland and Wales. The 6 Centres who were invited to participate were selected because of the author's acquaintance with the respective managers. All Employment Rehabilitation Centres have a trained psychological tester and this person administered the questionnaire to selected clients in groups. The groups were selected on a fairly arbitrary basis but the author did stipulate that all individuals must have work experience, and also not have a psychiatric disability. The groups tended to be predominantly male reflecting the predominantly male distribution of clients at Employment

Rehabilitation Centres. The response rate for the Centres at Bellshill and Port Talbot far exceeded the response rates at Preston and Cardiff. This fact reflected the author's particular friendships with staff at Port Talbot and Bellshill, and he did accordingly impose more on their preparedness to contribute a sample. In total, over 100 individuals were compiled from this source.

(d) MSC Jobcentres:

The managers at 6 Jobcentres in Wales were approached and asked if they would be willing to distribute some questionnaires to their staff inviting them to complete and return direct to the author. The Jobcentres approached were Newport, Port Talbot, Aberystwyth, Ebbw Vale, Colwyn Bay and Rhyl.

The Jobcentres who were invited to participate were selected because of the author's acquaintance with the respective managers. All managers agreed to distribute some questionnaires to their staff, and overall, the response rate from this source was encouraging. The sample consisted primarily of line management and commercial workers. The sex and age distribution was very mixed.

(e) Careers Officers;

A small sample of careers officers was obtained from the Mid Glamorgan Local Authority. About 15 careers officers who were attending a training course on which the author was tutoring were invited to complete the questionnaire, and to distribute some questionnaires to their work colleagues for their completion. The response rate from this source was encouraging with over 30 replies. The age and sex distribution was very mixed and the sample consisted of professional, line management and commercial workers.

(f) Nurses:

A small sample of nurses was obtained from a Nurses' Home in Edinburgh. A friend of the author distributed some questionnaires

to work colleagues inviting them to complete a questionnaire. About 20 completed questionnaires were returned to the author. The sample was all female and predominantly under 25 years.

7.10 After the data had been coded and punched on cards, the main study data analysis was commenced at the Department of Computing, UWIST in Cardiff. The SPSS Program was used for the analysis. In the first instance, data listings and frequency distributions for each questionnaire item response were produced. This procedure is necessary for checking whether there have been coding or punching errors. It is also a means of checking that no items have been attributed values outside their range. This "data cleaning" process in this study went relatively smoothly. However, the quality of the data needs to be examined in a number of other ways to determine whether the data is sufficiently free of deficiencies to merit further analysis.

7.11 This section concentrates on an examination of the quality of the data. A very useful analysis of the problems involved in a quasi-experimental design of this nature has been undertaken by Campbell and Stanley (1966). Campbell and Stanley make an important distinction between the internal validity and the external validity of research findings. Internal validity seeks to establish whether the experimental treatment can make a difference in this particular experiment, and external validity seeks to determine the extent to which the research findings are generalizable. It is obviously the ideal to have a design which is robust in both types of validity.

Internal validity can be threatened by biases resulting in differential selection of respondents representing different groups. In the present study all subjects were volunteer subjects theoretically, but admittedly when the questionnaire was administered in group situations some subjects probably felt coerced into completing the questionnaire. Consequently, problems can arise from the motivation of respondents to complete the questionnaire. Some individuals may also be very interested in the subject of the questionnaire while others may

respond only passively. For such reasons the data needs to be carefully examined for response biases.

External validity or the extent to which the findings can be generalized has, it is argued, been greatly enhanced in this study by compiling a sample which is heterogeneous in terms of occupational grouping and age. Together with the size of the sample, it is argued that this heterogeneity is a sufficient basis for allowing some generalizations to be made from this data. This argument is further supported by the exploratory nature of the study in terms of its aims to examine the relationships between the major variables. The author also believes that the external validity is increased by the absence of a specific experimenter and situational effect, in that the questionnaire was administered by different people and in different situations.

7.12 The data collection took place over an 8 month period, and the coding and data preparation was undertaken during this period. The codebook for the main study questionnaire is presented in Appendix E. The missing data can be analyzed in terms of those individuals who missed a single item of the questionnaire and those individuals who missed an entire section or major portion of the questionnaire. Only 4 individuals missed out an entire section or major portion of the questionnaire and these entire questionnaires were excluded from the analysis.

The missing data in relation to single item questions was quite evident in the biographical section in response to a request to state father's occupation. 60 or 16.4% of the sample failed to state father's occupation. It does in retrospect appear that the question was not sufficiently clear in indicating that it was interested in the father's occupation irrespective of whether the father was currently working, retired or dead. Only one individual omitted to state his/her occupation but otherwise all other individuals provided all the biographical information requested.

Seven (1.7%) of the sample failed to give sufficient information to permit a career pattern analysis of their work history. One or two of these individuals left the work history section blank, others omitted to record the dates during which they held a particular job, and others did not indicate the position held which prevented an analysis of vertical and horizontal career movement. The information required on reasons for leaving jobs was provided satisfactorily by nearly all the sample except the one or two individuals who left the work history section blank.

There was very little missing data in response to the 35 item OPSCI questionnaire. There was one missing response from the same individual for all items from Q20 to Q35. These items are presented by themselves on a new page and it was clear that this individual had missed a page in the completion of the questionnaire.

The missing data problems in relation to the OBI concentrated on the supplementary instructions after the subjects had completed the 12 work orientation items. For example, the subjects were asked to rate in order of importance up to three work orientations with which they strongly agreed or agreed. Respondents were not required to make a third ranking if they had only 'strongly agreed' or 'agreed' with 2 statements, which accounts for the high number of third ranks recorded as 'not ascertained'. However, 8.8% of the sample also failed to make a second rank, and 3.8% failed to make a first rank. If the number of respondents who failed to make a second rank seems rather high it is possible that the questionnaire instructions proved difficult for some individuals to understand or alternatively, the task of differentiating between most important beliefs difficult to perform.

The missing data for the Tausky Meaning of Work scale was confined to a few subjects who appeared to have difficulty because of the forced choice response to the questions. In such cases, item responses were left blank or the subjects indicated that their response was "in between" the two alternatives

provided. These "error response patterns" were given a code indicating an "in between" response (see Main Study Codebook in Appendix E). However, overall these numbers were rather small.

7.13 A further issue in relation to the quality of the data is dependent on the extent to which there is evidence of response sets. In other words, whether a significant proportion of the sample were responding to all the questions in a similar way. It was clear that the presence of any response sets in the data would be most easily identified by examining the distribution of responses by each subject to both the OPSCI and OBI measures included in the research questionnaire.

The response patterns to the OPSCI are listed in Table 24 indicating the percentage of items subjects responded to in a similar way:

Table 24 OPSCI Response Patterns

% of 35 Scale Items	No. of Subjects		
	'Yes' Response	'No' Response	'In Between' Response
91-100	0	0	0
81-90	0	0	2
71-80	5	0	2
31-70	361	182	165
21-30	40	136	105
11-20	13	88	114
0-10	3	17	34

Overall, the OPSCI response patterns are very reassuring, and there is little evidence of a tendency-to-agree or tendency-to-disagree response set. The tendency to use a particular kind of response was extremely small, and insufficient to significantly affect the outcome of any subsequent analyses. The main difference between the pilot study (see section 5) and the main study distribution of responses was the difference in the number of "in between" responses. The difference reflected the pilot study scale questionnaire instructions which asked respondents to "try not to fall back on the middle 'uncertain' answers except

when the answer at either end is really impossible for you". The main study questionnaire contained no such advice for respondents to avoid the middle response.

The response patterns to the OBI are listed in Table 25 again indicating the percentage of items subjects responded to in a similar way.

Table 25 OBI Response Patterns

% of 12 Scale Items	Distribution of Responses				
	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
91-100	4	9	0	0	0
81-90	1	8	2	0	0
21-80	126	342	130	153	31
11-20	63	31	87	84	37
0-10	228	32	203	185	374

Overall, the response patterns are again reassuring, and there is little evidence of a tendency-to-agree or a tendency-to-disagree response set. Four individuals "strongly agreed" with all items, and nine individuals "agreed" with all items, and indeed, it is still conceptually conceivable that these responses were valid. In any case, this tendency to use a particular kind of response was extremely small, and insufficient to significantly affect the outcome of any subsequent analyses.

It was not possible to adopt as severe an approach to the examination of the reliability of the data as had been adopted in the development of the OPSCI. The questionnaire did not include any repeat items by which consistency of response could be examined. Consequently, the extent of missing data was the only criterion by which individual questionnaires were excluded from the data analysis. Therefore, only the 4 subjects who had omitted to complete a section or major portion of the questionnaire were excluded from the data analysis.

7.14 The following sections present the findings of the preliminary

analysis of the data. The characteristics of the main study sample are presented in Table 26. The objective in accumulating the sample was to obtain a cross-sectional group from the general population representing various occupational groupings. There were 31.5% of the sample who were either skilled, semi-skilled or unskilled, 27.5% who were either in the commercial or personal services group, and 40.8% who were management and professional workers. However, perhaps the representativeness of the sample would have been increased by a greater number of skilled workers. Also a larger number of professional workers would have been more desirable to give greater meaning to cross comparisons between occupational groups.

The age of the sample ranged from 16 years to 61 years, and the mean age was 32.5 years but more subjects in the 51 years and over age group would have been preferred. A more equal balance of females to males would also have been more acceptable. A sizeable portion of the sample (33.9%) were unemployed, and although this permits employed and unemployed group comparisons it is possible that the unemployed group might have had atypical short-term views of work. However, on the other hand, the OPSCI items in general have been developed to stimulate direct recall of past behaviour at work; and it could be argued that the inclusion of employed and unemployed subjects increases the heterogeneity of the sample, and thus the generalizability of the findings.

7.15 In addition to choice of occupation, three other measures of occupational behaviour have already been described as reasons for leaving jobs, and career patterns analysed, firstly, in terms of horizontal and vertical moves, and secondly, in terms of stable, unstable, multiple-trial and conventional profiles (section 7.7 defines the meaning of these classifications). The results of the two career pattern analyses are described in Table 27 overleaf.

Table 26 Main Study Sample Characteristics

		No.	%
Sex	Male	305	72.3
	Female	117	27.7
Age	16-25 years	138	32.7
	26-35 years	132	31.3
	36-50 years	120	28.4
	51 and over	29	6.9
Marital Status	Married	236	55.9
	Single	164	38.9
	Divorced	19	4.5
	Widowed	3	0.7
Dependents	None	240	56.9
	One	66	15.4
	Two	55	13.0
	Three	36	8.5
	Four or over	25	5.9
Educational Level	Higher Degree/Degree	64	15.2
	HND or Diploma	37	8.8
	'A' or 'H' Level	86	20.4
	OND or Diploma	26	6.2
	'O' Level/Trade Certificates/ Commercial Certificates	105	24.9
	Apprenticeship	20	4.7
	No Qualification	84	19.9
Employment Status	Employed	251	59.2
	Unemployed	144	33.9
	Invalidity Benefit	27	6.4
Occupation	Professional/Senior Management	42	10.0
	Line Management/Technical	130	30.8
	Commercial/Personal Services	116	27.5
	Skilled	39	9.2
	Semi and Unskilled	94	22.3
	Not Ascertained	1	0.2
Father's Occupation	Professional/Senior Management	32	7.6
	Line Management/Technical	78	18.5
	Commercial/Personal Services	47	11.1
	Skilled	98	23.2
	Semi and Unskilled	98	23.2
	Not Ascertained	69	16.4

* The characteristics of each sample sub-group (see section 7.4) are presented in Appendix G.

Table 27 Results of Career Pattern Analyses

		No.	%
Career Pattern	Stable	109	26.1
	Unstable	150	35.3
	Multiple-Trial	106	24.9
	Conventional	50	12.1
	Not Ascertained	7	1.7
Career Pattern	Horizontal	287	68.0
	Vertical	129	30.6
	Not Ascertained	6	1.4

The author's task of classifying career patterns in terms of stable, unstable, multiple-trial and conventional profiles was a relatively straightforward process. These terms have been operationally defined (see Section 7.7) in terms of job duration, and so there was no need for subjective interpretation. The sample, of course, was not compiled with the objective of securing four equal groups representing these four types of career pattern, and so it was not surprising that one group (the conventional group) was less well represented than the other three groups. The unstable group was better represented than the other categories because many young people in the sample fell into this category if they had failed to maintain any job for at least 3 years. Overall, the author considered that the numbers in each group were sufficiently large to enable some exploratory comparisons between the four types of career pattern profile.

The author's task of classifying career patterns in terms of horizontal and vertical movement was slightly more complex. The information for making these decisions was available from the reasons individuals gave for leaving jobs. It was decided to interpret vertical movement as a move to a better job because of promotion or because of a move to a job with better prospects. Very clearly the author had to use a rather subjective, judgemental process to decide whether a subject had made a vertical move because he seemed to have improved his career

prospects. Jobs which seemed to imply more responsibility, more staff control and seemed to provide career opportunities were usually regarded as vertical moves. Job moves for pay increases were not usually regarded by themselves as vertical moves. Many lateral moves are generated by pay differences from one firm to another and do not imply vertical movement in the sense which it is being interpreted in this study.

7.16 The final measure of occupational behaviour was based on an analysis of reasons for leaving jobs. The subjects were asked to record the specific reason for leaving each job. The author coded these responses into what the author considered to be 26 conceptually distinct categories. These 26 categories are presented in Table 28 together with the response frequencies for each time a reason was given for moving from a person's first job to a person's tenth job. No member of the sample had more than 10 jobs. It was clear that several of these different 26 reasons covered similar areas, and that a more potent analysis could be undertaken if similar reasons could be grouped to form meaningful constructs.

The allocation of 26 specific recorded reasons to a particular group was again necessarily a rather subjective process. The specific categories were described as domestic and personal; organizational conflict and dissatisfaction; personal job dissatisfaction; lateral transfers and redundancies; job advancement; and training and education advancement. The specific reasons which made up each of the six groups are outlined in Table 29. Table 29 presents the response frequencies for each time a reason from one of these 6 categories was given for moving from a person's first job to a person's tenth job.

The most difficult categories for which to allocate specific reasons were the organizational conflict and dissatisfaction category, and the personal job dissatisfaction category. It is clear that sometimes decisions as to whether a dissatisfaction is intrinsically or extrinsically induced are difficult

Table 28 Reasons for Leaving Jobs

Group Categories	Specific Recorded Reasons	Jobs									
		1	2	3	4	5	6	7	8	9	10
Domestic and Personal	Pregnancy	6	7	4	1	1	-	-	-	-	-
	Family Move/Spouse's Transfer	12	12	9	7	6	5	3	-	2	-
	Too far to travel	5	2	4	-	2	-	-	-	-	-
	Marriage	7	1	1	4	2	-	-	-	-	-
	Domestic/Personal reasons	10	13	7	3	3	3	1	-	-	1
	Health	20	18	29	23	23	5	9	6	2	5
Organizational Conflict/ Dissatisfaction	Dismissed	6	6	3	4	2	2	1	1	1	-
	Disagreement	10	2	3	2	-	1	1	2	-	-
	Didn't like work organization	4	5	2	4	2	-	-	-	-	-
	Poor working conditions	3	2	3	-	3	2	-	-	-	-
	Shift work/ unsatisfactory hours	3	4	5	4	1	2	1	-	-	-
Personal Job Dissatisfaction	Dissatisfied with money	31	27	17	8	9	4	2	1	2	1
	No job satisfaction	33	19	15	11	5	6	4	2	2	1
	Work too hard (physically/ mentally)	3	2	2	2	-	-	-	-	-	-
	No prospects/ opportunities	2	5	2	1	-	-	-	-	-	-
	Apathy	1	-	-	-	-	-	-	-	-	-
	Lack of job security	-	2	-	1	-	-	-	-	-	-
Lateral Transfers/ Redundancies	Redundant	28	35	25	15	10	5	5	4	1	-
	Temporary job finished	15	23	11	6	2	3	-	-	1	-
	Lateral transfer	7	1	3	4	1	1	-	-	-	-
	National Service	18	5	2	1	-	1	-	-	-	-
Job Advancement	Promotion	36	34	24	9	5	3	1	-	-	-
	Better prospects elsewhere	46	25	17	16	4	3	1	1	1	-
Training/ Education Advancement	Further education/ training	47	24	12	5	1	1	-	1	-	1
	Return to school	1	-	-	-	-	-	-	-	-	-
	Commence apprenticeship	2	-	-	-	-	-	-	-	-	-
		356	274	200	131	82	47	29	18	12	9

Table 29 Group Classification of Reasons for Leaving Jobs

	Jobs									
	1	2	3	4	5	6	7	8	9	10
Domestic and Personal	60	53	54	38	37	13	13	6	6	6
Organizational Conflict/ Dissatisfaction	26	19	16	14	8	7	3	3	1	-
Personal Job Dissatisfaction	70	55	36	23	14	10	6	3	4	2
Lateral Transfers/Redundancies	68	64	41	26	13	10	5	4	2	-
Job Advancement	82	59	41	25	9	6	2	1	1	-
Training/Education Advancement	50	24	12	5	1	1	-	1	-	1

to make. However, even though the source of the dissatisfaction may be difficult to determine in fact, the perceived or construed source of the dissatisfaction is a valid reflection of an individual's psychological reality. In other words, the subjects had already made the distinction by attributing the source of the dissatisfaction to an intrinsic or extrinsic source.

7.17 The responses to the OPSCI items, the OBI items and the Tausky Meaning of Work Scale items will be examined separately in the following three sections in relation to the general psychometric analyses of these three instruments. The only other measure in the main study questionnaire not already mentioned in this preliminary analysis is Patchen's Job Motivation Index. The responses to this index are presented in the Table 30 below.

Table 30

Job Motivation	Very Strong	19	4.5
	Strong	130	30.8
	Moderate	208	49.3
	Slight	28	6.6
	Very Little	36	8.5

The distribution of responses by response category is not surprisingly, skewed in the direction of higher job motivation. The extreme scores are low suggesting that overall the distribution of responses can probably be considered to represent a normal distribution.

7.18 It is not congruent with the study's phenomenalist approach to present a series of formal hypotheses. However, it is possible for the author to state what relationships will be examined and what types of comparisons will be made on the basis of the data collected. It is apparent that a large number of relationships and comparisons could be examined from this data, so it is clear that an overall strategy is needed for the data analysis. It is also necessary that some selection takes place in terms of what relationships to examine as many relationships will be of little importance, and others difficult to intepret. In particular, therefore, the author was concerned to explore the relationships between the occupational persona, occupational beliefs and occupational behaviour. Another aim of the study was to examine the personal and situational correlates of the occupational persona. However, in the first instance, before any weight can be placed on any analysis involving the OPSCI and OBI measures, these instruments needed to be examined for psychometric acceptability.

8. Main Study Analysis

8.1 An important aim of this study was to satisfactorily develop an instrument to measure the occupational persona, or more precisely an instrument which is designed to describe in quantified terms, a person's self-perceived impact on and relations with others at work. In this context, therefore, a psychometric analysis of the OPSCI on the main study sample had to be viewed with considerable importance if any weight was to be placed on any subsequent analysis involving the OPSCI instrument. Table 31 shows the psychometric data and the OPSCI scale scores in both the pilot study and the main study. The set of items were identical in both studies. It can be seen that the coefficients of internal homogeneity, as represented by mean item-whole r, and alpha coefficients (Kuder-Richardson 20) are reasonably good in all cases. The tendency for coefficients to be slightly lower in the main study sample than in the pilot study was to be expected. The final 35 item version of the OPSCI was compiled from a much larger pool of 309 items by selecting items with relatively good scaling properties. For example, internal homogeneity figures could have been increased by chance factors to a rather falsely high level. It is also worth noting that calculating alpha coefficients by the Kuder-Richardson formula 20 does tend to underestimate the scale homogeneity because it does not allow for variations in the ease with which items are answered. Finally, it must be remembered that in unitary factor scales, items are not designed to repeat as closely as possible the factor composition of the previous items. Instead, each item must contribute as much variance as possible to the main unitary factor, and impart a specific factor variance which is different from the specific factor variance of any other item.

The individual item-whole correlations were rather similar for both sample 1 and sample 2. However, the Spearman rank-order correlations between item-whole values for each item in a scale on the two occasions only average 0.31. This finding is not unexpected because of the small number of items and the

Table 31 Characteristics of the OPSCI Scale and Subscales in Two Samples (study 1, n = 404; study 2, n = 422)

Scale or Subscale	Number of Items	Scale Midpoint	Study 1 Mean	Study 2 Mean	Study 1 SD	Study 2 SD	Study 1 Coefficient Alpha	Study 2 Coefficient Alpha	Study 1 Mean Item-Whole Correlation	Study 2 Mean Item-Whole Correlation
Total OPSCI Scale	35	35	39.77	40.4	6.84	6.19	.66	.52	.48	.49
Sociability v Aloofness	5	5	8.06	8.30	2.08	1.65	.94	.64	.53	.47
Dogmatism v Adaptability	5	5	6.67	6.25	2.65	2.42	.89	.67	.53	.54
Aggression v Accommodation	5	5	4.86	4.73	3.21	2.82	.90	.70	.50	.56
Stability v Instability	5	5	6.99	7.20	2.43	2.15	.80	.60	.50	.43
Tension v Relaxation	5	5	3.43	3.31	2.77	2.58	.67	.70	.48	.41
Dominance v Submissiveness	5	5	5.55	6.23	2.75	2.25	.84	.75	.45	.48
Depression v Elation	5	5	4.20	4.38	2.49	2.53	.73	.59	.39	.47

similarity of item-whole scale correlations.

There were statistically significant ($p < 0.05$) changes in mean scores from study 1 to study 2 for the dogmatism-adaptability and dominance-submissiveness scales. The decrease in the dominance scale can be explained by the large decrease in only one item (Q20). The mean scores for the sociability-aloofness and the stability-instability scales indicate positively skewed distributions with mean scores located towards the end-point of the scales. The positively skewed distributions on these two scales in particular are not unexpected and tended to replicate the findings produced in the pilot study. It was, therefore, clear that the usefulness of these two scales was weakened by the reduced ability of the scales to discriminate more effectively between individual cases. The frequency with which each response category was used for all 35 items is presented in Table 32 . It is evident that the items measuring the sociability-aloofness scale (Q1, Q8, Q15, Q22 and Q29) discriminate less effectively than most other items. The other 4 items (Q2, Q11, Q24, Q35) which do not discriminate very effectively contribute to the measurement of 4 different scales, and the means and standard deviations for the remaining scales indicate adequate score distributions.

8.2 Although the pilot study revealed 7 OPSCI scales which appeared conceptually distinguishable and factorially independent, it was, of course, important to examine whether the second sample could replicate this factorial independence. The SPSS factor analytic program available to the UWIST computer was used to perform a factor analysis on the 35 OPSCI item variables. The 35 variables were intercorrelated using the Pearson product-moment correlation coefficient. This correlation matrix is reproduced in Appendix F. The correlation matrix was factor analysed by the principal factoring method. This method automatically replaces the main diagonal elements of the correlation matrix with communality estimates. The squared multiple correlation between a given variable and the rest of the variables in the matrix gives the

Table 32 OPSCI Item Response Frequencies

Items	Response Categories					
	"Yes" or "True"		"In Between"		"No" or "False"	
	No.	%	No.	%	No.	%
1	337	79.9	80	19.0	5	1.2
2	271	64.2	135	32.0	16	3.8
3	193	45.7	83	19.7	145	34.4
4	255	60.4	138	32.7	29	6.9
5	100	23.7	150	35.5	172	40.8
6	167	39.6	170	40.3	85	20.1
7	82	19.4	146	34.6	194	46.0
8	206	48.8	202	47.9	14	3.3
9	221	52.4	161	38.2	40	9.5
10	232	55.0	121	28.7	69	16.4
11	312	73.9	94	22.3	16	3.8
12	84	19.9	88	20.9	250	59.2
13	166	39.3	192	45.5	64	15.2
14	150	35.5	104	24.6	168	39.8
15	293	69.4	104	24.6	25	5.9
16	202	47.9	119	28.2	101	23.9
17	179	42.4	77	18.2	166	39.3
18	208	49.3	126	29.9	88	20.9
19	60	14.2	109	25.8	253	60.0
20	215	50.9	143	33.9	63	14.9
21	135	32.0	151	35.8	135	32.0
22	382	90.5	39	9.2	0	0.0
23	104	24.6	90	21.3	227	53.8
24	66	15.6	29	6.9	326	77.3
25	180	42.7	148	35.1	93	22.0
26	66	15.6	143	33.9	212	50.2
27	109	25.8	99	23.5	213	50.5
28	193	45.7	101	23.9	127	30.1
29	243	57.6	152	36.0	26	6.2
30	196	46.4	142	33.6	83	19.7
31	130	30.8	83	19.7	208	49.3
32	252	59.7	115	27.3	54	12.8
33	87	20.6	110	26.1	224	53.1
34	309	73.2	102	24.2	10	2.4
35	64	15.2	97	23.0	260	61.6

initial estimates of the communalities. Inferred factors are automatically obtained by this method. The communality estimates are reproduced in Appendix F.

In the principal factoring method an iteration procedure can be used to improve the estimates of communality. Rather than adopt the Kaiser criterion to specify the number of unrotated factors to be retained (ie the Kaiser criterion that only factors with eigenvalues of 1.0 or greater should be retained), the author decided to limit the factor analysis to 7 factors. In other words, whether the same 7 factor solution of the first analysis would be reproduced in the second analysis.

Factors resulting from principal component solutions are usually rotated to achieve interpretability of the results. In this instance, the author decided to employ a Varimax rotation because the objective of this rotation is to interpret the underlying factors by simplifying the description of each factor of the factor matrix. The notion of "simple structure" is achieved in this way when each factor is described by the smallest number of variables, and simultaneously, each variable correlates highly with the smallest number of factors.

Table 33 presents the results of a principal component factor analysis with 10 iterations rotated to a varimax criterion, and limited to 7 factors which account for 47.5% of the total variance. This orthogonal solution reproduced the 7 factor structure which had emerged from the pilot study, but oblique solutions were attempted to better approximate the ideal of simple structure. A principal component factor analysis with iterations was rotated to an oblique solution using 6 different values of "Delta". The value of "Delta" which provided the best fit for the data was the -.3 value, but in general, the oblique rotational solutions did not appear to be better representations of simple structure than the orthogonal solutions. The rotated oblique factor pattern matrix, the rotated oblique factor structure matrix, and the correlation coefficients for the 7 rotated oblique factors are reproduced in Tables 34, 35 and 36.

Table 33 Rotated Orthogonal Factor Matrix

Scale Items	I	II	III	IV	V	VI	VII
3	72	02	05	00	17	05	-07
10	55	-10	06	02	04	-04	-22
17	63	-01	-03	-05	-03	05	-20
24	45	01	-08	09	-01	13	-03
31	44	-14	-02	18	06	-00	04
2	02	39	14	22	02	10	10
9	23	54	05	06	08	-12	04
16	09	44	03	04	01	37	00
23	01	57	01	-10	-09	26	14
30	01	74	-04	-04	-08	05	-04
1	02	-02	51	-12	-07	01	-03
8	01	00	45	-10	28	-01	12
15	-05	14	51	-03	18	08	03
22	-01	00	52	-03	01	-09	04
29	00	06	58	-11	03	-02	12
5	23	-03	-19	60	-05	-08	-15
12	-00	18	-02	55	-11	14	-22
19	08	-01	-24	61	-13	08	-03
26	14	03	-25	24	20	20	-06
33	-05	01	-04	55	-23	18	-20
6	09	-12	07	-25	65	-12	-04
13	-01	00	24	-14	64	-14	05
20	-03	-04	20	-21	18	07	01
27	11	12	-17	-00	52	01	07
34	06	-16	26	-10	43	-06	12
7	03	11	-06	07	-08	55	-12
14	-05	03	-07	04	-03	53	-10
21	16	00	-06	11	05	49	09
28	05	18	16	-02	-15	49	-04
35	08	-07	-09	30	-14	27	-33
4	-07	-01	00	-13	07	-02	60
11	00	09	21	-25	-09	00	29
18	-11	05	03	-14	00	03	41
25	-11	13	10	-24	15	-26	33
32	-19	04	11	03	05	-15	51

Table 34 Rotated Oblique Factor Pattern Matrix

Scale Items	I	II	III	IV	V	VI	VII
5	59	-19	-13	10	-01	03	-10
12	53	04	09	-07	-06	-16	-19
19	60	-04	05	15	-09	04	03
26	21	-09	19	23	24	-02	-03
33	53	09	15	-05	-18	02	-16
3	-03	-72	00	-06	14	-05	-03
10	-03	-55	-08	-09	01	06	-19
17	-12	-64	-00	02	-06	-03	-15
24	05	-45	09	06	-02	-02	02
31	18	-43	-02	-01	05	14	10
7	01	00	55	04	-04	-07	-09
14	-02	09	55	05	00	01	-08
21	08	-12	52	04	06	05	15
28	-06	-04	48	-18	-14	-14	-02
35	24	-03	24	02	-10	08	-29
1	-08	-03	02	-51	-11	04	-06
8	-02	-02	-05	-43	25	01	08
15	03	05	09	-51	16	-11	-01
22	03	-00	-08	-52	03	01	02
29	-04	-02	-01	-57	-01	-04	09
6	-23	-05	-07	-02	63	09	-08
13	-07	04	-10	-20	63	-00	-01
20	-20	04	10	-17	17	04	-01
27	01	-08	02	20	53	-13	06
34	-03	-03	-01	-24	40	17	10
2	25	-04	05	-16	03	-37	10
9	09	19	-16	-03	10	-54	-01
16	01	-10	32	-03	03	-42	01
23	-12	-06	20	02	-09	-56	13
30	-07	05	-03	07	-06	-76	-09
4	-04	-03	03	05	03	05	62
11	-20	-05	01	-17	-14	-08	28
18	-08	07	06	01	-02	-02	41
25	-17	05	-24	-04	11	-14	28
32	14	15	-12	-08	02	-01	51

Table 35 Rotated Oblique Factor Structure Matrix

Scale Items	I	II	III	IV	V	VI	VII
5	64	-27	00	27	-08	06	-27
12	58	-05	22	09	-16	-19	-30
19	65	-12	15	31	-18	01	-16
26	28	-18	23	27	17	-03	-12
33	58	-01	24	13	-29	-03	-30
3	03	-72	10	-04	21	04	-11
10	05	-57	00	-03	06	15	-26
17	01	-64	11	05	00	07	-24
24	13	-47	17	10	00	01	-09
31	19	-45	03	04	08	17	-02
7	13	-08	58	09	-12	-16	-16
14	08	00	54	09	-07	-08	-14
21	14	-19	52	08	03	-05	03
28	01	-07	51	-15	-17	-23	-05
35	36	-14	32	16	-19	06	-41
1	18	00	-01	-51	-05	01	02
8	-19	00	-12	-48	32	00	19
15	-10	05	06	-53	19	-17	09
22	-11	04	-11	-52	04	-02	10
29	-19	03	-05	-59	07	-08	19
6	-31	-09	-17	-13	67	15	05
13	-22	01	-19	-29	66	02	14
20	-26	04	03	-23	20	02	07
27	-01	-12	00	13	51	-10	09
34	-18	-06	-12	-30	46	16	17
2	21	-01	13	-14	01	-41	10
9	05	25	-09	-07	07	-54	10
16	08	-10	41	-03	00	-47	00
23	-07	01	29	-04	-09	-60	17
30	00	13	11	02	-09	-74	01
4	-18	12	-07	-05	10	-02	62
11	-28	05	-03	-25	-06	-11	33
18	-17	15	-01	-07	03	-08	43
25	-30	16	-30	-17	19	-13	40
32	-04	24	-20	-14	08	-07	53

Table 36 Correlation Coefficients for the 7 Rotated Oblique Factors

	I	II	III	IV	V	VI	VII
I	-						
II	-12	-					
III	15	15	-				
IV	25	-05	06	-			
V	-14	-10	-10	-11	-		
VI	-05	-11	-18	07	03	-	
VII	-23	17	-13	-16	13	-11	-

8.3 The main study loadings on each of the rotated factors is presented in the following tables. A detailed description of each factor is outlined in Part 2, section 5.

Sociability v Aloofness Scale	Orthogonal	Oblique
Q1. I like mixing with other people at work	.51	-.51
Q8. I believe that I am quite popular at work	.45	-.43
Q15. At work I usually make an effort to keep other people cheerful	.51	-.51
Q22. I believe that my manner at work is friendly	.52	-.52
Q29. I appear to have many friends at work	.58	-.57

Dogmatism v Adaptability Scale	Orthogonal	Oblique
Q2. My advice to people is to be cautious - take time and think things over	.39	-.42
Q9. I believe that to work effectively bosses must be obeyed and respected	.54	-.56
Q16. I believe that there are 2 kinds of people at work: the responsible and the irresponsible	.44	-.42
Q23. I believe that there is only one correct way of running things at work	.57	-.56
Q30. I believe that rules must be followed strictly if work is to be efficient	.74	-.76

Aggression v Accommodation Scale	Orthogonal	Oblique
Q3. I have had some quarrels with people at work	.72	-.72
Q10. I sometimes get cross at work	.55	-.55
Q17. Once in a while at work I lose my temper and get angry	.63	-.64
Q24. I have been or nearly been in a fight at work	.45	-.45
Q31. I have sometimes told lies to people at work	.44	-.43

Stability v Instability Scale		Orthogonal	Oblique
Q4.	I am usually calm and not easily upset at work	.60	.62
Q11.	I can take kidding or teasing at work without getting upset	.29	.28
Q18.	My mood at work does not often go up and down	.41	.41
Q25.	I don't often feel "fed up" at work	.33	.28
Q32.	I rarely get annoyed in company	.51	.51

Tension v Relaxation Scale		Orthogonal	Oblique
Q5.	I usually feel uncomfortable when having to mix with a new group	.60	.59
Q12.	I often feel self-conscious when talking to supervisors at work	.55	.53
Q19.	Starting conversations with strangers at work is usually rather difficult for me	.61	.60
Q26.	I am slow to trust people at work	.24	.21
Q33.	I am easily embarrassed when people watch me work	.55	.53

Dominance v Submissiveness Scale		Orthogonal	Oblique
Q6.	I like to organize people at work	.65	.63
Q13.	I believe that I have the ability to inspire people to work better	.64	.63
Q20.	I like doing jobs in which I have to act quickly	.18	.17
Q27.	I would rather work with several people under me than in a team	.52	.53
Q34.	I enjoy having responsibility at work	.43	.40

Depression v Elation Scale		Orthogonal	Oblique
Q7.	My future at work looks very dismal	.55	.55
Q14.	There is little chance for promotion in my job unless I get a lucky break	.53	.55
Q21.	It seems to me that most people in positions of authority are not really interested in the problems of the average man	.49	.52
Q28.	I believe that the situation of the average man is getting worse, not better	.49	.48
Q35.	I often feel listless and tired at work for no reason	.27	.24

8.4 Discussion of the Main Study OPSCI Factor Analysis

The orthogonal solution (Table 33), the oblique factor pattern solution (Table 34) and the oblique factor structure matrix (Table 35) all agree rather well in showing that 33 out of the 35 items had major loadings on the factors they were expected to define and not elsewhere. The seven factors accounted for 47.5% of the total variance. Factor I accounted for 13.1% of the total variance; Factor II accounted for 8.5%; Factor III for 7.4%; Factor IV for 5.4%; Factor V for 4.8%; Factor VI for 4.3%; and Factor VII for 4.0%. The orthogonal solution provides a sharper grouping of factors, and the oblique solution appears to contribute little in the way of useful information.

The psychometric analysis of the instrument has produced what the author regards as in general satisfactory results. Two scales produced rather positively skewed distributions with mean scores located towards the end point of the scales. These scales referred to the sociability-aloofness and stability-instability dimensions. It is possible that social desirability responding may have been evident on these scales but it seems unlikely as there is no evidence of social desirability responding on other scales where it might have been expected (eg aggression-accommodation and tension-relaxation dimensions). These skewed distributions may also be a sample-specific phenomenon reflecting the mature mean age of the sample which might tend to be more stable and perhaps make more effort to be sociable. Although the author was conceptually satisfied with the items in these scales, the empirical evidence suggests the need for further experimentation with modified items.

There was also an item (Q20) on the dominance-submissiveness scale which had a rather low loading on the main study sample. The author recognized that it was conceptually less well integrated with the other items in the scale, as it appeared to refer to "impulsiveness" rather than "dominance". However, the item loaded well with the other items in the pilot study and so was retained in the final version of the OPSCI. The

empirical evidence now suggests that this item is in need of revision.

Although there are obvious attractions in having a brief, easily administered scale there may be dangers in having only a few items measuring each scale. For example, the coefficients of internal homogeneity and test-retest reliability can be more easily distorted, and these results may be more susceptible to sample-specific phenomena.

The problems associated with validating the OPSCI have already been discussed in Part 2, where it is argued that the individual's world of experience can only be genuinely known by the individual himself, and that the validity of the OPSCI relies only on construct and content validation. The previous accounts of the item generation, the Factored Homogeneous Item Dimension (FHID) approach, and the attempts to eliminate response bias all contribute to the overall construct validity of the OPSCI instrument. Although it is argued that the notion of "agreement with a criterion" is inapplicable in examining the validity of the OPSCI scales, the construct validity of the scales is increased by demonstrating relationships in the "expected" direction. The following sections of this chapter discuss whether any such "meaningful" relationships can be established, and the discussion in Chapter 9 re-examines the construct validation evidence for the OPSCI.

8.5 Another objective of this study was to examine the usefulness of the Occupational Beliefs Index (OBI) as a measure of work orientation. It was clearly evident that a psychometric analysis of the OBI on the main study sample had to be undertaken. Like the psychometric analysis of the OPSCI, it was essential that the OBI be demonstrated to have psychometric acceptability if weight was to be placed on any subsequent analysis involving the OBI instrument.

Table 37 shows the mean and standard deviation scores for the 12

orientations to work and the total work-orientation index. Eleven of the work-orientations have a mean very close to the scale mid-point, and as was to be expected, the economic work-orientation has the most positively skewed distribution.

Table 37 Characteristics of OBI Items

Work-Orientations	No Items	Scale Mid-point	Mean	Standard Deviation
Existential	1	3	3.49	1.33
Economic	1	3	4.08	0.93
Affiliative	1	3	3.34	1.10
Self-Fulfilling	1	3	3.87	0.95
Socially Esteemed	1	3	3.36	1.16
Socially Obligated	1	3	3.12	1.11
Power	1	3	3.16	1.08
Political	1	3	3.00	1.13
Security	1	3	3.21	1.19
Achievement	1	3	3.64	1.01
Altruistic	1	3	3.30	1.05
Self-Identity	1	3	3.93	0.96
Total Work-Orientation Index	12	36	41.53	6.87

Table 38 presents the response frequencies in more detail. Overall, this psychometric data relating to the OBI is very encouraging in that the responses to most items approximated a normal distribution.

Table 38 OBI Response Frequencies

Work-Orientations	Strongly Agree		Agree		Undecided		Disagree		Strongly Disagree	
	No.	%	No.	%	No.	%	No.	%	No.	%
Existential	111	26.3	153	36.3	37	8.8	76	18.0	45	10.7
Economic	149	35.3	204	48.3	31	7.3	31	7.3	7	1.7
Affiliative	45	10.7	195	46.2	59	14.0	103	24.4	20	4.7
Self-Fulfilling	104	24.6	218	51.7	50	11.8	42	10.0	8	1.9
Socially Esteemed	40	9.5	156	37.0	82	19.4	106	25.1	38	9.0
Socially Obligated	53	12.6	185	43.8	70	16.6	91	21.6	23	5.5
Power	33	7.8	161	38.2	91	21.6	113	26.8	24	5.7
Political	39	9.2	105	24.9	142	33.6	90	21.3	46	10.9
Security	43	10.2	184	43.6	52	12.3	106	25.1	36	8.5
Achievement	65	15.4	225	53.3	62	14.7	54	12.8	16	3.8
Altruistic	38	9.0	181	42.9	89	21.1	96	22.7	18	4.3
Self-Identity	117	27.7	212	50.2	52	12.3	30	7.1	11	2.6

Temporal	Past		Present		Future	
	No.	%	No.	%	No.	%
	89	21.1	64	15.2	269	63.7

The respondents to the OBI were also asked to rate the beliefs or statements with which they "strongly agreed" or "agreed" in order of importance. The following Table 39 presents the frequencies with which the individual work orientation beliefs were ranked either first, second or third in importance. As was made clear in section 7.13, respondents were not required to make a third ranking if they had only "strongly agreed" or "agreed" with 2 statements, which accounts for the high number of third ranks recorded as "not ascertained". It is also worth noting that all 12 categories of work orientation were ranked first by some respondents, and the category which had the fewest top three rankings still attracted 30 respondents. Such findings provide some limited support for the theoretical assumption made by the author that these 12 types of work orientation are empirically significant, and indeed, conceptually distinguishable.

Table 39 Most Important Ranked Work Orientation Categories

Work-Orientations	Ranked First in Importance		Ranked Second in Importance		Ranked Third in Importance		Most Important Total Top Three Ranks	
	No.	%	No.	%	No.	%	No.	%
Existential	67	15.9	33	7.8	22	5.2	122	9.6
Economic	160	37.9	68	16.1	32	7.6	260	20.5
Affiliative	12	2.8	22	5.2	30	7.1	64	5.1
Self-Fulfilling	63	14.9	71	16.8	38	9.0	172	13.6
Socially Esteemed	3	0.9	13	3.1	14	3.3	30	2.4
Socially Obligated	14	3.3	20	4.7	31	7.3	65	5.1
Power	6	1.4	19	4.5	11	2.6	36	2.8
Political	8	1.9	18	4.3	10	2.4	36	2.8
Security	7	1.7	19	4.5	28	6.6	54	4.3
Achievement	14	3.3	43	10.2	48	11.4	105	8.3
Altruistic	14	3.3	17	4.0	16	3.8	47	3.7
Self-Identity	38	9.0	42	10.0	59	14.0	139	11.0
Not Ascertained	16	3.8	37	8.8	83	19.7	136	10.7
	N = 422		N = 422		N = 422		N = 1266	

The advantage of introducing a system of ranking the top 2 or 3 beliefs is that in the case of many identical Likert-type responses, the most central beliefs will still be identified. A disadvantage is that the interrelationships and resulting 'profile' will be de-emphasized. The ranking results are perhaps more useful at an individual level of analysis whereas the Likert-type responses are more useful at the more general, nomethetic level of analysis.

The relationship between the most important first three ranks, and the responses in the 'strongly agree' and 'agree' categories was calculated by the Spearman rank-order correlation. The correlation coefficient was 0.95 indicating an almost identical relationship.

8.6 A factor analysis was employed to examine the relationships between the 12 items in the Occupational Beliefs Index. Table 40 presents the results of a principal components analysis rotated by the Varimax method. Three factors were retained for rotation on the basis that their eigenvalues were 1.0 or greater. These 3 factors which emerged from the orthogonal rotation accounted for 52.6% of the total variance.

Oblique solutions were also attempted to better approximate the ideal of simple structure. Various levels of obliqueness were arbitrarily explored, and the value of DELTA which best fits the data is the 0.0 value, which is a fairly oblique (correlated) solution. Tables 41 and 42 show the rotated oblique factor pattern matrix and the rotated oblique factor structure matrix. The variables in these factor analyses were intercorrelated using the Pearson product-moment correlation coefficient, and the matrix is reproduced in Appendix F together with the communality estimates. Table 43 presents the correlations among the factors.

In the orthogonal solution 9 of the items loaded highly on the first factor which accounted for 29.8% of the total variance and all 12 items loaded positively on this factor. The economic

work-orientation item was the only item to load highly on the second factor which accounted for 11.5% of the total variance. The altruistic, socially obligated, and self-fulfilling work-orientation items had quite high negative loadings on this factor. The power and political work-orientation items loaded most highly on the third factor which accounted for 11.3% of the total variance. The socially esteemed variable also loaded quite highly on this factor, and the existential and security variables had rather high negative loadings on this factor.

However, the oblique solution with a delta value of 0.0 may be a better representation of simple structure than the orthogonal solution. Seven items loaded most highly on Factor I with the altruistic, existential, socially esteemed and security variables loading most highly. The economic and achievement items loaded most highly on Factor II. The socially obligated item loaded highly on Factor II but more highly on Factor III along with the power and political work-orientation items.

Table 40 Rotated Orthogonal Factor Matrix

Work-Orientation	I	II	III
Self-Identity	.67	.12	-.08
Achievement	.64	.29	-.01
Altruistic	.58	-.48	.01
Socially Obligated	.54	-.26	.04
Self-Fulfilling	.53	-.19	.20
Socially Esteemed	.52	.23	.30
Existential	.51	-.04	-.33
Security	.49	-.02	-.28
Affiliative	.48	-.01	-.12
Economic	.27	.53	-.06
Power	.31	.09	.44
Political	.07	-.11	.35

It was to be expected that all 12 items would be positively correlated as all the items measure to some extent the degree of orientation an individual has to his work. The first factor includes all the items which deal with psychological, social and philosophical gratifications from work. The second factor tends to refer to a striving for success and material gain. The third factor emphasises the external locus of control on our work

orientation as well as perhaps referring to a need to shape our immediate environment, and indeed, even provide compensation for an external locus of control. However, this three factor grouping was not a very sharp structure as some items loaded highly on more than one factor. The author thus decided that the factor grouping was not sufficiently sharp to justify any further analysis using these 3 factors as the basic units of the analysis.

Table 41 Rotated Oblique Factor Pattern Matrix

Work-Orientations	I	II	III
Altruistic	.73	-.32	.15
Existential	.60	.09	-.22
Socially Esteemed	.57	-.11	.16
Security	.54	.11	-.18
Self-Identity	.52	.30	.07
Affiliative	.45	.12	-.01
Self-Fulfilling	.45	-.04	.32
Achievement	.37	.47	.13
Economic	-.03	.61	-.01
Socially Obligated	.17	.38	.42
Power	.01	.18	.51
Political	-.04	-.09	.37

Table 42 Rotated Oblique Factor Structure Matrix

Work Orientations	I	II	III
Altruistic	.67	-.11	.31
Self-Identity	.62	.45	.19
Socially Esteemed	.58	.05	.29
Existential	.57	.26	-.08
Security	.53	.26	-.05
Affiliative	.49	.25	.09
Self-Fulfilling	.51	.09	.42
Achievement	.54	.58	.22
Economic	.14	.60	.00
Socially Obligated	.37	.43	.46
Power	.17	.19	.51
Political	.02	-.09	.36

Table 43 Correlation Coefficients for the 3 Rotated Factors

	I	II	III
I	-		
II	.28	-	
III	.23	.02	-

8.7 The use of the term "index" in the title "Occupational Beliefs Index" refers to a measure which combines the values of several items into a composite measure. An individual's work-orientation can only be partially measured by any single belief, and several items are usually needed to describe an individual's work-orientation. It has already been empirically demonstrated that the OBI is a unidimensional scale; that is, all the items measure a stronger or less strong work-orientation. However, it is also of great theoretical interest to determine whether the OBI formed a hierarchical scale; that is, whether particular beliefs were consistently more important than other beliefs so that individuals who respond positively to an important belief will generally respond positively to less important beliefs and vice versa.

Scalogram analysis, commonly referred to as Guttman Scale analysis, is one technique for determining whether the 12 OBI items are hierarchical in nature. A Guttman scale can be defined as a scale that is both unidimensional and cumulative, and it is this cumulative property which differentiates Guttman scales from almost all other kinds of scales. Each item in a Guttman scale must be ordinal to the extent of having the capacity of being divided into two parts like agree or disagree. Individuals are able to make 5 different responses to the OBI items so the author had to select a cutting point above which individuals were considered to have "agreed" with the item and below which individuals were considered to have "disagreed" with the item. The author decided that the middle, "undecided" responses would be considered to have "disagreed" with the item.

The first Guttman scale analysis included all 12 items of the OBI. The first stage of the analysis is the ordering of all items from most important to least important, which is obtained by sorting the items in descending order according to the proportion of respondents who agree or disagree with the item. The degree to which a group of items is both unidimensional and cumulative is determined by the extent to which "agrees" on any item are associated with "agrees" on all items which have been rated as

less important. It is also true that a group of items are unidimensional and cumulative if "disagrees" on any item are associated with "disagrees" on all items which have been considered more important. Table 44 below gives the results of the analysis in more detail where the "Errors" column gives the number of individuals who agreed with an item when they should have disagreed, and the number of individuals who disagreed with an item when they should have agreed.

Table 44 Guttman Scale Analysis I

Items Listed in Order of Most Importance	Agree		Disagree		Errors	
	No.	%	No.	%	Agree	Disagree
Economic	353	84	69	16	0	62
Self-Identity	329	78	93	22	1	80
Self-Fulfilling	322	76	100	24	3	76
Achievement	290	69	132	31	4	100
Existential	264	63	158	37	15	105
Affiliative	240	57	182	43	24	101
Socially Obligated	238	56	184	44	44	66
Security	227	54	195	46	82	49
Altruistic	219	52	203	48	104	22
Socially Esteemed	196	46	226	54	112	11
Power	194	46	228	54	154	5
Political	144	34	278	66	134	0

Coefficient of Reproducibility	=	.73
Minimum Marginal Reproducibility	=	.63
Percent Improvement	=	.10
Coefficient of Sociability	=	.27

The coefficient of reproducibility is a measure of the extent to which an individual's scale score is a predictor of his response pattern. A general guideline to the interpretation of this measure is that a coefficient of reproducibility higher than 0.9 is considered to indicate a valid scale, and so the coefficient of reproducibility in this first analysis is too low at 0.73. The "minimum marginal reproducibility" represents the minimum coefficient of reproducibility that could have occurred for the scale given the cutting points used and the proportion of individuals agreeing or disagreeing with each item. The "percent improvement" represents the difference between the coefficient of

reproducibility and the minimum marginal reproducibility and indicates the extent to which the former is due to response patterns rather than the inherent cumulative interrelation of the items. In this analysis the percent improvement is rather small. Finally, the coefficient of scalability should be well above 0.6 if the scale is genuinely unidimensional and cumulative, and in this analysis, the coefficient of scalability is clearly too low at 0.27.

A second Guttman Scale analysis was performed with only 7 items of the OBI. The five middle items on the first analysis in the ordering of importance were excluded from the second analysis. Table 45 below gives the results of the second analysis.

Table 45 Guttman Scale Analysis II

Items Listed in Order of Most Importance	Agree		Disagree		Errors	
	No.	%	No.	%	Agree	Disagree
Economic	353	84	69	16	0	60
Self-Identity	329	78	93	22	1	64
Self-Fulfilling	322	76	100	24	20	58
Achievement	290	69	132	31	34	40
Socially Esteemed	196	46	226	54	29	47
Power	194	46	228	54	88	14
Political	144	34	278	66	111	0

Coefficient of Reproducibility	= .81
Minimum Marginal Reproducibility	= .69
Percent Improvement	= .12
Coefficient of Scalability	= .39

The coefficient of reproducibility and the coefficient of scalability were higher than in the first analysis but they were still too small for the 7 items to be considered as making up an acceptable Guttman scale. Therefore, a third analysis was performed with only 5 items. The five items were selected from the original 12 items on the basis of these items having the highest correlations with the other items in the scale. Table 46 overleaf presents the results of the third analysis.

Table 46 Guttman Scale Analysis III

Items Listed in Order of Most Importance	Agree		Disagree		Errors	
	No.	%	No.	%	Agree	Disagree
Self-Identity	329	78	93	22	0	70
Self-Fulfilling	322	76	100	24	12	57
Achievement	290	69	132	31	36	54
Socially Obligated	238	56	184	44	57	28
Altruistic	219	52	203	48	104	0

Coefficient of Reproducibility	= .80
Minimum Marginal Reproducibility	= .66
Percent Improvement	= .14
Coefficient of Scalability	= .41

The coefficient of scalability indicates that a scale had been developed which was more valid than the scales developed in the first two analyses. However, the coefficient of reproducibility and the coefficient of scalability were still too low to indicate that these items formed a valid Guttman scale. At this point, the author decided to conclude that the OBI items were not hierarchical or cumulative in nature, and no further Guttman scale analyses were undertaken.

8.8 The decision to include Tausky's Meaning of Work scale in the research questionnaire was essentially to provide the author with a safeguard in the event of the OBI being found to be a psychometrically unacceptable instrument. The response patterns to the author's revision of Tausky's scale and the response patterns to Tausky's original scale are presented in Table 47. It is very clear that the responses to the author's revision of Tausky's scale do not follow any similar pattern of responses to Tausky's original scale. The Guttman coefficient of reproducibility for the revised version was only 0.77, a long way short of the 0.9 which is generally interpreted as indicative of a valid scale. The coefficient of scalability was only 0.39, and this coefficient should be well above 0.6 if the scale is truly unidimensional and cumulative.

Table 47 Responses to Tausky's Meaning of Work Scale

Questions and Response Alternatives *		Responses in Tausky Study	Responses In Present Study
1. If you were out of work, which would you rather do?			
Go on welfare(-)	Claim unemployment benefit (-)	9%	43%
Take a job as a car washer that paid the same as welfare (+)	Take an unskilled job that paid the same as unemployment benefit (+)	91%	57%
2. If by some chance you had enough money to live comfortably without working, do you think that you would work anyway, or would you not work?			
Would not work (-)		18%	31%
Would work anyway (+)		82%	69%
3. Which kind of work would you rather have?			
Average pay from work that is looked down on by people you know (-)		33%	35%
Low pay from work that is respected by the people you know (+)		67%	65%
4. Is the most important thing about getting a promotion			
Getting more pay (-)		67%	26%
Getting more respect from friends and neighbours (+)		33%	74%
5. Which job would you choose if you could be sure of keeping either job?			
Better than average pay as a truck driver (-)	Better than average pay as an unskilled worker (-)	73%	47%
Less than average pay as a bank clerk (+)	Less than average pay as a manager (+)	27%	53%
6. If you could be sure that your income would go up steadily without getting a promotion, would you care about being promoted?			
No (-)		74%	49%
Yes (+)		26%	51%

* Where two pairs of response alternatives are tabled, Tausky's response alternatives always precede the author's revised response alternatives.

The most marked differences between the response pattern distributions of the Tausky study and the present study are on items 4, 5 and 6. In other words the sample in the present study tended to be less instrumentally orientated to their work than the sample in the Tausky study. This finding, of course, is hardly surprising considering the nature of the Tausky sample which was restricted to male, blue-collar workers, and the nature of the present sample which included males and females, and also professional, management and commercial workers.

In relation, however, to the construct validity of the OPSCI, and in particular the OBI scales, the author was interested in the relationships between Tausky's scale and the OPSCI and OBI scales. Tausky's Meaning of Work scale sets out to measure four possible orientations towards work: instrumental, quasi-expressive and two levels of expressive orientation, and the 6 items are additive in nature so as to produce a total scale score with low scores reflecting an instrumental orientation to work and high scores reflecting an expressive orientation to work.

The relationships between the scales were analyzed by using a standard multiple regression analysis, and the author employed the SPSS REGRESSION program. The results of the standard multiple regression analysis are presented in Table 48. The findings show that $R^2 = 0.25$, indicating that 25% of the variation in the Meaning of Work scale is explained by the OPSCI and OBI variables operating jointly. Interpreting the beta weights as indices of relative importance there are four variables which correlate with the Meaning of Work scale at the 0.01 level of probability. The economic work orientation is very significantly related to the instrumental pole of Tausky's scale, and the existential work orientation was significantly related to the expressive pole. The achievement and altruistic work orientations were also related to Tausky's expressive orientation but only at the 0.10 level of probability. The two OPSCI scales to be significantly correlated to the Tausky scale are the dominance-submissiveness and aggression-accommodation dimensions. High scorers on the aggression pole tended to be linked with Tausky's instrumental orientation,

Table 48 Regression Analysis of the Meaning of Work Scale on OPSCI and OBI Scale Variables

	Beta	F	Simple r
Sociability-Aloofness	.00	.00	.00
Dogmatism-Adaptability	-.10	3.48	-.03
Aggression-Accommodation	-.14	8.47**	-.15
Stability-Instability	-.09	3.07	.05
Tension-Relaxation	.03	.44	-.08
Dominance-Submissiveness	.17	8.95**	.21
Depression-Elation	-.08	2.64	-.21
Existential	.15	8.63**	.19
Economic	-.22	18.29**	-.15
Affiliative	.06	1.19	.16
Self-Fulfilling	.04	.53	.27
Socially Esteemed	.06	1.43	.16
Socially Obligated	.00	.00	.00
Power	.08	2.09	.23
Political	.07	2.12	.14
Security	.06	1.39	.14
Achievement	.11	3.43	.21
Altruistic	.09	2.81	.26
Self-Identity	.02	.17	.17

** $p < .01$ df = 1 and 402

Multiple R = 0.50

R^2 = 0.25

and high scorers on the submissiveness dimension tended to be associated with Tausky's instrumental orientation.

The author has made the not unreasonable assumption that Tausky's scale and the author's revised scale are measuring much the same attitude in that the item wording was changed in only 2 items, and the different response patterns may be attributed to the different representation in the two samples. Thus, overall the relationships between Tausky's scale and the OPSCI and OBI scales provide each other with mutual support for the constructs inherent in the scales. It is the supporting relationships of this kind which can only contribute to the weight which is placed on the analysis involving the OPSCI and OBI in the subsequent sections.

8.9 An important aim of the study was to descriptively examine the demographic correlates of the newly developed Occupational Persona Self-Construct Inventory. It was recognized that several demographic variables were likely to intercorrelate, and so, as a first step the interrelationships of the demographic variables were analyzed.

Firstly, Kendall's tau nonparametric correlations were computed by the SPSS NONPAR CORR program for all the data relating to the demographic variables. Although the "marital status" variable is not coded according to an ordinal level of measurement as required by Kendall's tau, two of the coded categories, "divorced" and "widowed", have very few frequencies and thus the variable is practically dichotomous with only two categories or values (ie "married" or "single"). A rank order may not be inherent in these category definitions, but either arrangement of the categories satisfies the mathematical requirement of ordering. Consequently, the dichotomy can be treated as an ordinal-level measure. The demographic variable intercorrelations are presented in Table 49.

Secondly, a series of crosstabulations were calculated for the most strongly interrelated demographic variables, and Tables 50-58 show the important demographic variable crosstabulations. The chi-square statistic was not computed for these tables because the

chi-square test requires that the expected frequencies in each cell should not be too small. The author considered that the expected frequencies in certain cells were too small to allow the test to be properly or meaningfully used. The author had the choice of combining categories in order to increase the expected frequencies in the various cells, but the author considered that combining cells would detract from the meaning of the data. Thus, the subsequent interpretation of the crosstabulation tables was based on an inspection of the relationships between the variables.

These crosstabulations reveal the complexity of the interrelationships between the demographic variables. Age was linked to educational level in that older individuals were less likely to have obtained high academic qualifications. Age was also associated with occupational group in that younger individuals were more likely to be involved in line management, commercial and unskilled activities. Sex and occupational group were strongly related because considerably more females were employed in commercial jobs. Sex and educational level were also linked because in particular more males had reached their highest educational level by obtaining either an HND or diploma, or an OND or diploma.

Occupational group was very obviously linked to educational level in that workers at the professional and line management levels had reached higher educational levels than workers at the skilled and unskilled levels. Occupational level and educational level were also linked to marital status. More professional and skilled workers were married.

Crosstabulation tables are not presented where very obvious relationships exist between the variables. For example, between age, marital status and number of dependents; and between father's occupation and occupational level and educational level; and between employment status and occupational level and educational level. Sex is also linked to number of dependents in that the employed females tended to have less dependents. No meaningful relationships existed between employment status and age and number

of dependents, and sex and marital status and father's occupation.

The interrelationships between the career pattern histories and the other demographic variables are similarly complex. Tables 59-66 present the crosstabulation tables for horizontal/vertical career patterns and selected demographic variables, and the stable/unstable career patterns and selected demographic variables. It is the older individuals in the sample who display more horizontal career movement, and obviously it is the individuals at higher educational levels and occupational group levels who display more vertical career movement. Sex, marital status and number of dependents were not related to horizontal/vertical career patterns.

However, sex was related to stable/unstable career patterns where females were more likely to have unstable career patterns, and males were more likely to have experienced multiple-trial career patterns. It is also the younger individuals in the sample who display more unstable career patterns, and the older individuals who exhibit stable and multiple-trial career patterns. Unmarried individuals are more likely to have unstable career patterns. Individuals with, in general, lower educational levels and lower occupational levels tended to exhibit more unstable and multiple-trial career patterns.

This series of crosstabulations rather clearly illustrates the complexity of the interrelationsips between the various demographic variables, and indicates the need for cautious interpretations of the relationships between the demographic variables and any other variables. Particularly important in relation to the author's theoretical propositions to explain occupational choice and occupational behaviour are the relationships between the demographic variables and occupational choice and occupational behaviour. The author's occupational belief system model has acknowledged the importance of socio-economic constraints in shaping occupational behaviour (see section 3.19), and the following section examines the amount of variance that selected demographic variables can account for in explaining different kinds of occupational behaviour.

Table 49 Demographic Variable and Scale Intercorrelations (decimal points are omitted)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
1. Sex																																
2. Age	-05																															
3. Marital Status	10	-40																														
4. Dependents	-19	35	-54																													
5. Education	-04	10	05	07																												
6. Employment Status	-15	05	17	04	45																											
7. Father's Occupation	-06	15	-11	10	25	19																										
8. Occupation	00	02	12	-02	66	45	23																									
9. Hor/Vert Career Pattern	-06	-15	02	-06	-35	-35	-16	-42																								
10. Stable/Unstable Car.Patt	-08	09	-08	03	07	03	07	07	-17																							
11. Sociability-Aloofness	06	05	-01	01	13	-06	00	04	-11	00																						
12. Dogmatism-Adaptability	-08	29	07	10	48	40	08	43	-11	05	09																					
13. Aggression-Accommodation	-20	06	-04	06	01	04	09	01	00	12	-02	-10																				
14. Stability-Instability	-07	15	-12	10	04	-10	06	-05	05	-02	22	10	-24																			
15. Tension-Relaxation	-04	-20	22	-09	01	18	-04	08	00	00	-29	09	18	-37																		
16. Dominance-Submissiveness	-16	16	-22	18	-15	-18	09	-18	05	00	26	-06	08	18	-28																	
17. Depression-Elation	-02	07	09	01	28	31	09	28	-12	00	07	24	14	-25	31	-18																
18. Existential W-O	-03	16	-03	11	17	18	06	15	02	03	10	36	-08	08	03	-05	06															
19. Economic W-O	-18	02	-02	12	11	06	02	06	-06	-02	10	23	08	00	-01	10	14	19														
20. Affiliative W-O	19	-10	10	-02	17	12	05	12	-06	02	30	16	-15	11	-07	-07	02	30	15													
21. Self-Fulfilling W-O	01	07	-04	05	-06	-03	-09	-05	02	-02	26	10	-13	24	-21	25	-25	29	02	35												
22. Socially Esteemed W-O	-11	04	-12	18	-09	-04	-06	-06	10	01	14	10	06	05	-07	14	-12	12	27	26	26											
23. Socially Obligated W-O	-18	21	-06	09	01	10	04	00	00	11	11	23	-10	08	-04	09	00	28	00	16	29	28										
24. Power W-O	-18	01	-09	08	-24	-10	-18	-21	09	-03	15	-06	13	09	-15	55	-24	02	12	07	27	15	15									
25. Political W-O	-03	13	-13	11	-17	-11	-07	-24	10	-05	00	-06	-04	09	-14	12	-18	-05	-06	-08	16	13	09	18								
26. Security W-O	01	17	00	02	22	25	10	23	00	08	09	39	-04	06	04	-06	10	39	11	25	13	15	31	05	-01							
27. Achievement W-O	-12	-05	08	06	08	05	01	04	17	17	03	12	00	13	-18	29	32	32	28	39	28	39	28	23	00	34						
28. Altruistic W-O	07	13	-02	02	06	01	00	05	01	08	22	23	-16	11	-09	05	-02	29	-08	33	39	21	49	12	07	27	23					
29. Self-Identity W-O	-08	14	-02	13	16	12	06	10	03	08	22	31	03	08	00	04	-08	35	23	28	33	36	36	17	-01	37	50	32				
30. Temporal W-O	05	-39	08	-10	-22	-19	-19	-22	04	-07	05	-17	-04	09	-07	08	-27	-05	01	10	09	13	-04	20	14	-10	12	00	02			
31. Work-Orient. Index	-10	15	-06	15	07	11	-01	04	05	06	29	34	-07	18	-12	19	-11	58	34	54	59	58	59	40	22	53	65	57	66	09		
32. Meaning of Work Scale	13	-08	05	-05	-17	-06	-16	-17	12	-06	10	-03	-15	05	-08	21	-21	19	-15	17	27	16	20	23	14	14	21	26	17	16	32	
33. Job Involvement Index	-02	16	-13	10	-18	-20	-15	-25	14	00	20	-03	-03	14	-18	29	-25	10	00	06	26	18	19	31	11	06	23	22	24	05	30	23

Correlations between demographic and career pattern variables are Kendall's tau; all other correlations are Pearson's r

$r \geq .15$, $p < .001$ $r \geq .12$, $p < .01$

Table 50 Crosstabulation Table for Age and Sex

Sex	Age			
	17-25 yrs	26-35 yrs	36-50 yrs	51-65 yrs
Males	88(29.1%)	102(33.8%)	89(29.5%)	22(7.3%)
Female	48(41.0%)	30(25.6%)	31(26.5%)	7(6.0%)

Table 51 Crosstabulation Table for Age and Education

Educational Level	Age			
	17-25 yrs	26-35 yrs	36-50 yrs	51-65 yrs
Higher Degree or Degree	15(23.4%)	29(45.3%)	16(25.0%)	4(6.2%)
HND or Diploma	18(48.6%)	12(32.4%)	7(18.9%)	0(0.0%)
'A' or 'H' Level	47(54.7%)	25(29.1%)	12(14.0%)	2(2.3%)
OND or Diploma	11(42.3%)	4(15.4%)	7(26.9%)	4(15.4%)
'O' Level or Trade/ Commercial Certificates	26(25.0%)	33(31.7%)	40(38.5%)	5(4.8%)
Apprenticeship	1(5.3%)	6(31.6%)	7(36.8%)	5(26.3%)
No Qualifications	18(21.7%)	23(27.7%)	31(37.3%)	9(10.8%)

Table 52 Crosstabulation Table for Age and Occupational Group

Occupational Group	Age			
	17-25 yrs	26-35 yrs	36-50 yrs	51-65 yrs
Professional	2(4.8%)	22(52.4%)	16(38.1%)	2(4.8%)
Line Management	58(44.6%)	41(18.5%)	24(18.5%)	7(5.4%)
Commercial	49(42.2%)	29(25.0%)	31(26.7%)	6(5.2%)
Skilled	4(10.3%)	11(28.2%)	18(46.2%)	6(15.4%)
Unskilled	23(25.3%)	28(30.8%)	31(34.1%)	8(8.8%)

Table 53 Crosstabulation Table for Sex and Occupational Group

	Occupational Group				
	Professional	Line Management	Commercial	Skilled	Unskilled
Male (N=305)	32(10.5%)	103(33.8%)	51(16.7%)	37(12.1%)	81(26.6%)
Female (N=117)	10(8.5%)	27(23.1%)	65(55.6%)	2(1.7%)	13(11.1%)

Table 54 Crosstabulation Table for Sex and Educational Level

Educational Level	Sex	
	Male	Female
Higher Degree or Degree	41(13.4%)	23(19.7%)
HND or Diploma	35(11.5%)	2(1.7%)
'A' or 'H' Level	55(18.0%)	31(26.5%)
OND or Diploma	25(8.2%)	1(0.9%)
'O' Level or Trade/Commercial Certificates	66(21.6%)	39(33.3%)
Apprenticeship	19(6.2%)	1(0.9%)
No Qualifications	64(21.0%)	20(17.1%)

Table 55 Crosstabulation Table for Occupational Group and Educational Level

Educational Level	Occupational Group				
	Professional	Line Management	Commercial	Skilled	Unskilled
Higher Degree or Degree	41(64.1%)	16(25.0%)	6(9.4%)	0(0.0%)	1(1.6%)
HND or Diploma	0(0.0%)	32(86.5%)	2(5.4%)	3(8.1%)	0(0.0%)
'A' or 'H' Level	C(0.0%)	42(49.4%)	33(38.8%)	5(5.9%)	5(5.9%)
OND or Diploma	0(0.0%)	15(57.7%)	5(19.2%)	3(11.5%)	3(11.5%)
'O' Level or Trade/ Commercial Certificates	0(0.0%)	24(22.9%)	50(47.6%)	13(12.4%)	18(17.1%)
Apprenticeship	0(0.0%)	0(0.0%)	4(20.0%)	15(75.0%)	1(5.0%)
No Qualification	1(1.2%)	1(1.2%)	16(19.0%)	0(0.0%)	66(78.6%)

Table 56 Crosstabulation Table for Occupational Group and Marital Status

	Occupational Group				
	Professional	Line Management	Commercial	Skilled	Unskilled
Married	33(14.0%)	67(28.4%)	57(24.2%)	29(12.3%)	50(21.2%)
Single	8(4.9%)	60(36.8%)	50(30.7%)	9(5.5%)	36(22.1%)
Divorced	1(5.3%)	2(10.5%)	8(42.1%)	1(5.3%)	7(36.8%)
Widowed	0(0.0%)	1(33.3%)	1(33.3%)	0(0.0%)	1(33.3%)

Table 57 Crosstabulation Table for Occupational Group and Employment Status

	Occupational Group				
	Professional	Line Management	Commercial	Skilled	Unskilled
Employed	39(15.6%)	112(44.8%)	67(26.8%)	18(7.2%)	14(5.6%)
Unemployed	2(1.4%)	17(11.9%)	37(25.9%)	17(11.9%)	70(49.0%)
Invalidity Benefit	1(3.7%)	1(3.7%)	11(40.7%)	4(14.8%)	10(37.0%)

Table 58 Crosstabulation Table for Educational Level and Marital Status

Educational Level	Marital Status			
	Married	Single	Divorced	Widowed
Higher Degree or Degree	46(19.5%)	17(10.4%)	1(5.3%)	0(0.0%)
HND or Diploma	21(8.9%)	16(9.8%)	0(0.0%)	0(0.0%)
'A' or 'H' Level	28(11.9%)	55(33.5%)	2(10.5%)	1(33.3%)
OND or Diploma	12(5.1%)	13(7.9%)	1(5.3%)	0(0.0%)
'O' Level or Trade/ Commercial Certificates	66(28.0%)	32(19.5%)	6(31.6%)	1(33.3%)
Apprenticeship	17(7.2%)	2(1.2%)	1(5.3%)	0(0.0%)
No Qualifications	46(19.5%)	29(17.7%)	8(42.1%)	1(33.3%)

Table 59 Crosstabulation Table for Horizontal/Vertical Career Pattern and Age

Age	Career Pattern	
	Horizontal	Vertical
17-25 yrs	75(55.1%)	60(44.1%)
26-35 yrs	94(71.2%)	37(28.0%)
36-50 yrs	87(72.5%)	29(24.2%)
51-65 yrs	27(93.1%)	2(6.9%)

Table 60 Crosstabulation Table for Horizontal/Vertical Career Pattern and Educational Level

Educational Level	Career Pattern	
	Horizontal	Vertical
Higher Degree or Degree	32(50.0%)	32(50.0%)
HND or Diploma	12(32.4%)	25(67.6%)
'A' or 'H' Level	46(53.5%)	38(44.2%)
OND or Diploma	13(50.0%)	13(50.0%)
'O' Level or Trade/ Commercial Certificates	85(81.0%)	18(17.1%)
Apprenticeship	19(95.0%)	1(5.0%)
No Qualification	80(95.2%)	2(2.4%)

Table 61 Crosstabulation Table for Horizontal/ Vertical Career Pattern and Occupation

Occupation	Career Pattern	
	Horizontal	Vertical
Professional	19(45.2%)	23(54.8%)
Line Management	51(39.2%)	78(60.0%)
Commercial	93(80.2%)	23(19.8%)
Skilled	35(89.7%)	3(7.7%)
Unskilled	89(94.7%)	2(2.1%)

Table 62 Crosstabulation Table for Stable/Unstable Career Pattern and Sex

	Career Pattern			
	Stable	Unstable	Multiple Trial	Conventional
Male (N=305)	79(25.9%)	94(30.8%)	90(29.5%)	37(12.1%)
Female (N=117)	30(25.6%)	56(47.9%)	16(13.7%)	13(11.1%)

Table 63 Crosstabulation Table for Stable/Unstable Career Patterns and Age

Age	Career Pattern			
	Stable	Unstable	Multiple Trial	Conventional
17-25 yrs	13(9.6%)	104(76.5%)	9(6.6%)	9(6.6%)
26-35 yrs	44(33.3%)	30(22.7%)	35(26.5%)	22(16.7%)
36-50 yrs	38(31.7%)	12(10.0%)	50(41.7%)	15(12.5%)
51-65 yrs	13(44.8%)	0(0.0%)	12(41.4%)	4(13.8%)

Table 64 Crosstabulation Table for Stable/Unstable Career Pattern and Marital Status

Marital Status	Career Pattern			
	Stable	Unstable	Multiple Trial	Conventional
Married	82(34.7%)	33(14.0%)	79(33.5%)	37(15.7%)
Single	24(14.6%)	110(67.1%)	17(10.4%)	11(6.7%)
Divorced	3(15.8%)	7(36.8%)	9(47.4%)	0(0.0%)
Widowed	0(0.0%)	0(0.0%)	1(33.3%)	2(66.7%)

Table 65 Crosstabulation Table for Stable/Unstable Career Pattern and Educational Level

Educational Level	Career Pattern			
	Stable	Unstable	Multiple Trial	Conventional
Higher Degree or Degree	26(40.6%)	15(23.4%)	7(10.9%)	16(25.0%)
HND or Diploma	13(35.1%)	12(32.4%)	7(18.9%)	5(13.5%)
'A' or 'H' Level	15(17.4%)	48(55.8%)	12(14.0%)	9(10.5%)
OND or Diploma	7(26.9%)	9(34.6%)	8(30.8%)	2(7.7%)
'O' Level or Trade/ Commercial Certificates	28(26.7%)	25(23.8%)	35(33.3%)	15(14.3%)
Apprenticeship	4(20.0%)	4(20.0%)	11(55.0%)	1(5.0%)
No Qualification	16(19.0%)	37(44.0%)	26(31.0%)	2(2.4%)

Table 66 Crosstabulation Table for Stable/Unstable Career Pattern and Occupation

Occupation	Career Pattern			
	Stable	Unstable	Multiple Trial	Conventional
Professional	22(52.4%)	3(7.1%)	5(11.9%)	12(28.6%)
Line Management	38(29.2%)	50(38.5%)	19(14.6%)	22(16.9%)
Commercial	27(23.3%)	50(43.1%)	28(24.1%)	11(9.5%)
Skilled	7(17.9%)	5(12.8%)	24(61.5%)	2(5.1%)
Unskilled	15(16.0%)	42(44.7%)	30(31.9%)	3(3.2%)

8.10 In the analysis of the relationship between occupational choice and behaviour and the demographic variables, occupational choice was measured by occupational group level and occupational behaviour was measured by an analysis of career patterns. The demographic variables used in the analyses were sex, age, marital status, dependents, education, occupation and father's occupation.

The relationship between occupational choice and the selected demographic variables was examined by using a multiple discriminant analysis and the SPSS DISCRIMINANT program was used to analyze the data. The multiple discriminant analysis has the function of statistically differentiating between the 5 classified occupational groupings: professional and senior management; line management and technical; commercial and personal services; skilled; and semi-skilled and unskilled. The direct method was used in which all the independent variables are entered into the analysis concurrently. Weiss (1976) gives a fuller account of the rationale behind the use of multiple discriminant analysis.

The multiple discriminant analysis resulted in only 2 significant discriminant functions which jointly account for 79% of the total variance. After removing the first two discriminant functions a lambda of .001 is computed which suggests that any further discriminant functions would not significantly add to our ability to differentiate between the 5 occupational groups. The means and standard deviations of the variables are presented in Table 67. Table 68 shows the standardized discriminant function coefficients, and the centroids of the 5 occupational groups are listed in Table 69, and plotted in Figure 1.

The first discriminant function produced a chi-square value of 96.22 and accounted for 56% of the total dispersion. High educational level very clearly differentiates the professional and management groups from the skilled and unskilled groups, and father's occupation of the former groups also tends to be higher.

Table 67 Means and SDs of the Occupational Groups

	Occupational Group									
	Professional		Management		Commercial		Skilled		Unskilled	
	M	SD	M	SD	M	SD	M	SD	M	SD
Sex	1.23	.43	1.20	.40	1.59	.49	1.06	.24	1.17	.38
Age	34.59	7.43	29.85	10.22	30.40	10.17	38.56	9.00	32.20	11.60
Marital Status	1.21	.41	1.52	.53	1.60	.68	1.21	.41	1.73	.69
Dependents	2.28	1.27	1.76	1.25	1.59	1.02	2.29	1.27	1.77	1.15
Education	1.00	.00	3.03	1.33	4.34	1.56	4.79	1.37	6.24	1.34
Father's Occupation	2.95	1.49	3.13	1.35	3.34	1.32	3.85	1.26	4.12	.95

Table 68 Standardized Discriminant Function Coefficients for Demographic Variables Using Occupational Groups as Criteria

Variable	Standardized Discriminant Function Coefficients	
	I	II
Sex	-.10	.90
Age	.22	-.29
Marital Status	-.14	.05
Dependents	.12	-.02
Education	-.01	.00
Father's Occupation	-.13	-.17

Table 69 Occupational Group Means in Discriminant Space

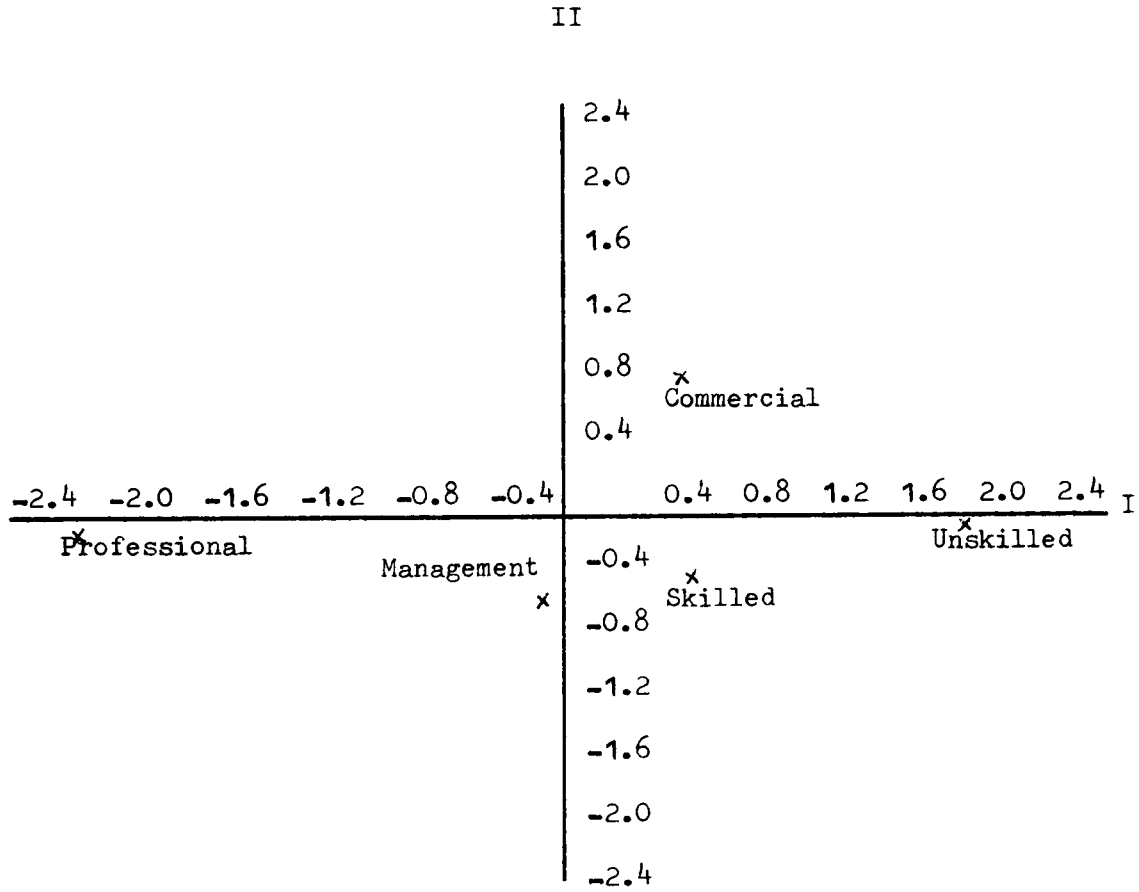
Occupational Group	Axis	
	I	II
1. Professional/Senior Management	-2.39	-.24
2. Line Management/Technical	-.65	-.25
3. Commercial/Personal Services	.40	.74
4. Skilled	.49	-.50
5. Semi-skilled/Unskilled	1.77	-.19

Table 70 Classification Matrix for Five Occupational Groups

Occupational Group	% Group Hits				
	1	2	3	4	5
1. Professional/Senior Management	100.0	0.0	0.0	0.0	0.0
2. Line Management/Technical	19.5	51.7	12.7	15.3	0.8
3. Commercial/Personal Services	4.3	12.9	49.5	17.2	16.1
4. Skilled	8.8	8.8	5.9	58.8	17.6
5. Semi-skilled/Unskilled	1.5	4.5	6.1	13.6	74.2

% Correct Group Classifications - 61.43%

Figure 1 Centroids of Five Occupational Groups on Discriminant Functions I and II



The second discriminant function produced a chi-square value of 24.57, and accounted for 23% of the total dispersion. The location of the commercial group at the positive end of the dimension indicates that most commercial workers in this sample are female, and the commercial and unskilled workers tended to be younger than the other groups.

Predicted classifications from the above procedure can be related to actual group membership to obtain a "hit-miss" table as presented in Table 70. The overall "hit" rate is the proportion of actual members of each occupational group who are predicted on the basis of the discriminant function equations to be in that occupational group. The professional group had a 100% "hit" rate but there was overlap between the other groups, and overall this classification routine was able to correctly identify 61.4% of the sample to the occupational group to which they actually belong. Clearly this discriminant analysis was very effective in predicting the professional group, but this group was clearly differentiated in terms of educational level as every member of the sample's professional group had reached degree level.

8.11 The relationship between career patterns, classified into stable, unstable, multiple-trial and conventional work histories, and the selected demographic variables was also examined by using a multiple discriminant analysis. The direct method was used, and the SPSS DISCRIMINANT program was employed to analyze the data. The multiple discriminant analysis resulted in three discriminant functions of which only two functions were statistically significant. The means, and standard deviations of the variables are presented in Table 71. Table 72 shows the standardized discriminant function coefficients and the centroids of the four career patterns are listed in Table 73 and plotted in Figure 2.

The first discriminant function produced a chi-square value of 47.62, and accounted for 70% of the total dispersion.

Inspection of Figure 2 shows how the unstable group is clearly differentiated from the three other groups. The location of the unstable group at the positive end of the function indicates that these individuals tend to be younger, more likely to be single with a lower level of occupation and a slightly greater tendency to be female.

The second discriminant function produced a chi-square value of 2.68 and accounted for 14% of the total dispersion. This function appears to differentiate more clearly between the stable and conventional groups on the one hand, and the multiple-trial group on the other hand. The multiple trial group tended to be of a lower occupational and educational level, as well as having a higher mean age than the other groups.

The percentage of actual cases from the career pattern group which are correctly predicted by the seven demographic variables is presented in Table 74. 57.4% of the cases were correctly identified.

Although some of these findings will be sample-specific, it is perhaps not surprising that the demographic variables explain so much of the occupational behaviour variance. Occupational choice, of course, is known to be related to several demographic variables but it was more interesting to find so much of the variance in the career pattern differences being accounted for by demographic variables. These findings, therefore, certainly indicate the considerable weight of the socio-economic constraints in the context of the author's theoretical propositions to explain occupational choice and occupational behaviour.

8.12 An important objective of the study was to descriptively examine the personal, educational and work history correlates of the newly developed Occupational Persona Self-Construct Inventory. At the same time, the author also considered it desirable to analyze the relationships among all the demographic variables and scales measured in the research questionnaire in order to

Table 71 Means and SDs for Demographic Variables

Variable	Career Patterns							
	Stable		Unstable		Multiple Trial		Conventional	
	M	SD	M	SD	M	SD	M	SD
Sex	1.30	0.46	1.36	0.48	1.19	0.39	1.24	0.43
Age	35.74	0.22	24.00	5.57	37.93	9.59	34.02	9.40
Marital Status	1.31	0.53	1.85	0.46	1.35	0.69	1.29	0.59
Dependents	2.08	1.21	1.35	0.90	2.24	1.33	1.84	1.21
Education	3.47	2.04	4.03	1.96	4.67	1.87	3.00	1.91
Occupation	2.47	1.21	3.17	1.24	3.36	1.20	2.11	0.98
Father's Occupation	3.39	1.35	3.24	1.34	3.69	1.29	3.44	1.41

Table 72 Standardized Discriminant Function Coefficients for Demographic Variables Using Career Pattern as Criteria

Variable	Standardized Discriminant Function Coefficients	
	I	II
Sex	.12	.09
Age	-.77	-.23
Marital Status	.33	-.17
Dependents	.00	-.28
Education	.00	-.12
Occupation	.26	-.84
Father's Occupation	-.05	.13

Table 73 Career Pattern Group Means in the Discriminant Space

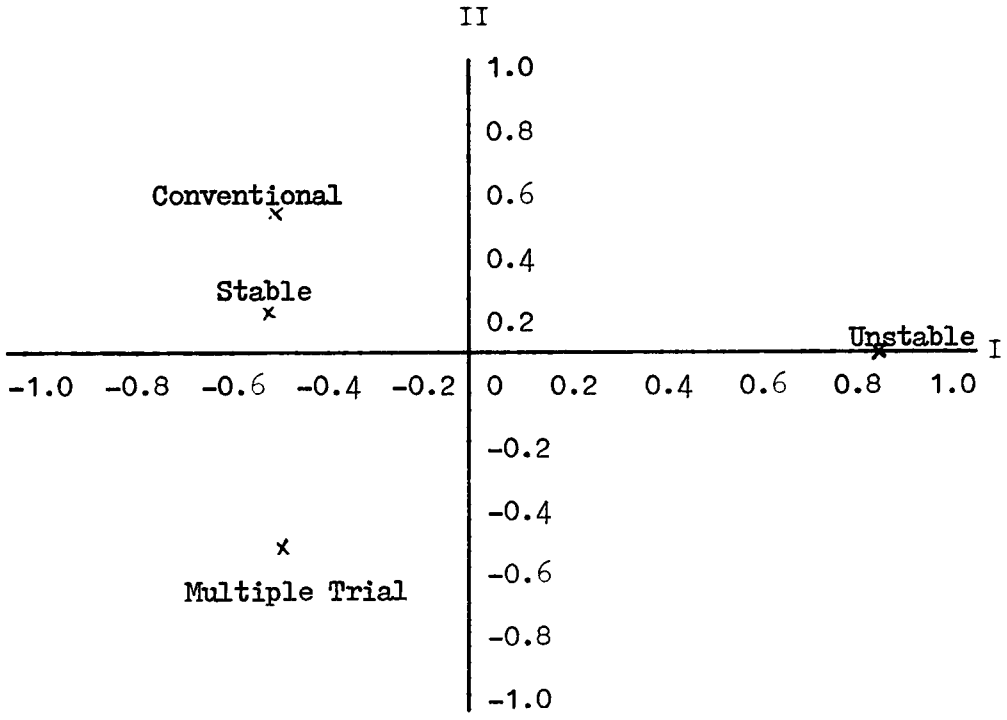
Career Pattern	Axis	
	I	II
Stable	-.49	.22
Unstable	.84	.00
Multiple-Trial	-.49	-.53
Conventional	-.47	.57

Table 74 Classification Matrix for Four Types of Career Pattern

Career Pattern	% Group Hits			
	1	2	3	4
Stable	27.8	18.9	18.9	34.4
Unstable	3.9	82.7	9.4	3.9
Multiple-Trial	14.1	22.4	50.6	12.9
Conventional	24.4	13.3	4.4	57.8

% Correct Group Classifications = 57.4%

Figure 2 Centroids of Four Career Patterns on Discriminant Functions I and II



know the extent to which each variable is unique, or conversely, the extent to which it can be predicted from other variables.

It has already been explained that Kendall's tau nonparametric correlations were computed for the correlations between demographic and career pattern variables, but Pearson product-moment correlations were also calculated for all other correlations. A 33 x 33 correlation matrix was produced for all the data relating to the demographic variables and scales included in the research questionnaire, and this matrix is presented in Table 49. There are several intercorrelations of significance denoting some degree of relationship between several variables. However, our concern in the present study is not so much with the direction of these relationships but with the strength of these relationships. The objective of correlation analysis is to determine the extent to which variation in one variable is linked to variation in an other variable. If we square the Pearson's correlation coefficient, we obtain a measure of the proportion of variance in one variable "explained" by the other variable. The rest of this section will attempt to focus on the variables which are most strongly linked to "explaining" variation in other variables.

In examining this correlation matrix, the author had two main objectives. In the first instance, the author intended to focus on the demographic correlates of the 7 OPSCI scales and secondly the author intended to investigate the strength of the interrelationships between the 7 OPSCI scales and the 12 OBI scales. In the context of the author's occupational belief systems theory, it has already been proposed that the occupational persona is both a function and a consequence of occupational beliefs (see section 3.19), so it is hypothesized that there will be some strong relationships between the OPSCI scales and the OBI scale. Therefore, the following sections will focus on both the demographic and OBI scale correlates for each of the 7 OPSCI scales.

No personal, educational or work history variable explained any

significant amount of variance in the sociability-aloofness dimension. Reassuringly, however, about 9% of this dimension's variance was linked to the affiliative work orientation, 7% of its variance linked to the self-fulfilling work orientation, 5% of its variance linked to the altruistic work orientation, and 4% of its variance was associated with the job motivation index. It is encouraging for the construct validity of this scale that there are significant relationships with the affiliative, altruistic, socially esteemed and socially obligated work orientations.

Four demographic variables accounted for significant amounts of variance in the dogmatism-adaptability scale. About 23% of the scale's variance was related to education with the more dogmatic individuals having reached lower levels of education; about 18% of the scale's variance was linked to occupational level with the more dogmatic individuals having lower level occupations; about 16% of the scale's variance was associated with employment status with the more dogmatic individuals being those people who are out of work; and finally, about 8% of the scale's variance was related to age with the tendency for older individuals to be more dogmatic.

The 7 OPSCI scales were orthogonally rotated and so it was interesting to note that 6% of the dogmatism scale variance was linked to the depression-elation scale. That is,the tendency was for the more dogmatic individuals to be more depressed. There were also 6 OBI scales which appeared to account for relatively large proportions of the variance in the dogmatism-adaptability scale. About 15% was linked to the security work orientation; about 13% to the existential work orientation; about 10% to the self-identity work orientation; about 5% to the socially obligated work orientation; about 5% to the altruistic work orientation; and about 5% to the economic work orientation. In general, some of the findings in relation to the demographic correlates of the dogmatism-adaptability scale appear to be of particular interest. For example,

whether dogmatism is a causal variable of unemployment and low occupational group level, or an effect of these situations.

No demographic variable explained any appreciable amount of variance in the aggression-accommodation scale. About 6% of the scale's variance was linked to the stability-instability dimension with the more unstable individuals tending to be more aggressive. Another 3% of the scale's variance was related to the tension-relaxation dimension with the more tense individuals tending to be more aggressive. Both these findings, of course, contribute to the construct validity of this particular scale. Not much of the variance in the aggression-accommodation dimension was explained by any of the OBI scales. However, a series of relationships in the expected direction continued to contribute to the construct validity of this scale. About 7% of the scale's variance was together linked with the altruistic, affiliative and self-fulfilling work orientations where these 3 work orientations were related to the accommodation pole of this dimension. Finally, the power work orientation accounted for about 2% of the variance in the aggression-accommodation dimension.

The tension-relaxation scale accounted for the largest proportion of variance, about 14%, in the stability-instability dimension, with the more stable individuals tending to be more relaxed. About 6% of the scale's variance was linked to the depression-elation scale, and a further 6% associated with the aggression-accommodation scale, with the stable individuals tending to be more elated and more accommodating. The self-fulfilling work orientation "explained" about another 6% of the stability-instability scale's variance. Age and marriage are both significantly related to this dimension but account for even less of the scale's variance.

About 5% of the variance in the tension-relaxation scale was related to single marital status, with single individuals tending to be more tense and married individuals more relaxed.

Four other OPSCI scales also accounted for relatively large proportions of variance in the tension-relaxation scale. About 14% of the scale's variance was linked to the stability-instability dimension with the more unstable individuals also being more tense; about 10% of the scale's variance was associated with the elation-depression scale with the more tense individuals being more depressed; about 8% was related to the sociability-aloofness dimension, and another 8% was linked to the dominance-submissiveness dimension with the more tense individuals being more aloof and more submissive. All these relationships are in the expected direction and they do, of course, contribute to the construct validity of the scale. The self-fulfilling work orientation accounted for 4% of the scale's variance, but no other work orientations explained much variance in the tension-relaxation scale.

About 4% of the variance in the dominance-submissiveness scale was related to the married state. Interestingly about 30% of the scale's variance was linked to the power work orientation, and a further 6% was related to the self-fulfilling work orientation. Both these relationships are reassuringly in the expected direction. The strength of the relationships between the dominance-submissiveness scale and the sociability-aloofness and tension-relaxation scales have been mentioned in preceding paragraphs.

Finally, about 9% of the variance in the depression-elation scale was related to employment status with unemployed individuals tending to be more depressed. Educational level and occupational level are highly correlated and both accounted for a further 8% each of the variance in the depression-elation scale. Individuals who had reached higher levels of education and occupation were less depressed. Again these variables relate to each other in a sensible and comprehensible way. The power and self-fulfilling work orientations also both account for a further 6% each of the variance in the depression-elation scale, with the less depressed individuals having stronger power and self-fulfilling orientations

Table 75 Summary of the Demographic and OBI Scale Correlates of the OPSCI Scales

Sociability v Aloofness		
.13*	Low educational level	High educational level
.29**	Relaxation	Tension
.26**	Dominance	Submissiveness
.22**	Stability	Instability
.30**	Affiliative	
.26**	Self-Fulfilling	
.22**	Altruistic	
.22**	Self-Identity	
.17**	Achievement	
.15*	Power	
.14*	Socially Esteemed	
.12*	Socially Obligated	
.20**	Job Motivation	

Dogmatism v Adaptability		
.29**	Age	
.48**	Low education	High education
.40**	Unemployed	Employed
.43**	Low occupation	High occupation
.24**	Depression	Elation
.39**	Security	
.36**	Existential	
.31**	Self-Identity	
.23**	Socially Obligated	
.23**	Altruistic	
.23**	Economic	
.17**	Achievement	
.16**	Affiliative	
.17**	Past-Orientated	Future-Orientated

Aggression v Accommodation		
.24**	Instability	Stability
.18**	Tension	Relaxation
.14*	Depression	Elation
.16**		Altruistic
.15*		Affiliative
.13*		Self-Fulfilling
.13*	Power	

Stability v Instability		
.15*	Age	
.12*	Married	Single
.22**	Sociability	Aloofness
.24	Accommodation	Aggression
.37	Relaxation	Tension
.18	Dominance	Submissiveness
.25	Elation	Depression
.24	Self-Fulfilling	
.12	Achievement	
.14	Job Motivation	

Tension v Relaxation		
.20**		Age
.22**	Single	Married
.19**	Unemployed	Employed
.29**	Aloofness	Sociability
.18**	Aggression	Accommodation
.37**	Instability	Stability
.28**	Submissiveness	Dominance
.31**	Depression	Elation
.21**		Self-Fulfilling
.15**		Power
.14**		Political
.18**		Job Motivation

Dominance v Submissiveness		
.16**	Age	
.22**	Married	Single
.18**	High no dependents	
.15**	High education	Low education
.18**	Employed	Unemployed
.18**	High occupationa	Low occupation
.26**	Sociability	Aloofness
.18**	Stability	Instability
.28**	Relaxation	Tension
.18**	Elation	Depression
.55**	Power	
.25**	Self-Fulfilling	
.14*	Socially Esteemed	
.13*	Achievement	
.11*	Political	
.29**	Job Motivation	

Depression v Elation		
.28**	Low education	High education
.30**	Unemployed	Employed
.28**	Low occupation	High occupation
.24**	Dogmatism	Adaptability
.14*	Aggression	Accommodation
.25**	Instability	Stability
.31**	Tension	Relaxation
.18**	Submissiveness	Dominance
.25**		Self-Fulfilling
.24**		Power
.18**		Achievement
.18**		Political
.14*	Economic	
.12*		Socially Esteemed
.27**	Past-Orientated	Future-Orientated
.25**		Job Motivation

** $p < .001$

* $p < .01$

to work. Another two relationships supported the construct validity of the scale. About 7% of the scale's variance was linked to the temporal work orientation in that more depressed individuals had beliefs about work that tended to be fixated on the past; and about 6% of the scale's variance was linked to the Job Motivation Index with more depressed individuals being less motivated to work. The relationships between the depression-elation scale and the tension-relaxation, stability-instability and dogmatism-adaptability scales have been mentioned in preceding paragraphs.

8.13 It has already been stated that the author's occupational belief systems theory leads to the prediction that an individual's occupational persona traits are both a function and a consequence of any particular beliefs about work an individual may hold at any given point in time. The author had already assumed that the OPSCI and OBI scale items were conceptually distinct but in order to determine whether the items were measuring statistically distinct variables, the 35 items of the OPSCI and the 12 items of the OBI were submitted to a factor analysis.

The SPSS factor analytic program available to the UWIST computer was employed to perform a factor analysis on the 47 item variables. The 47 variables were intercorrelated using the Pearson product-moment correlation coefficient, and the correlation matrix was factor analysed by the principal factoring method. The correlation matrix is reproduced in Appendix F together with the communality estimates. Table 76 presents the results of a principal components analysis with 17 iterations, rotated to a varimax criterion on factors with an eigenvalue of 1.0 or greater. Oblique solutions were also attempted to better approximate the ideal of simple structure. However, none of the oblique solutions appeared to be better representations of simple structure than the orthogonal solutions.

It does appear that 8 usable factors can be extracted which in total account for 86.4% of the total variance and include 45 of

Table 76 Rotated Orthogonal Factor Matrix

Items	I	II	III	IV	V	VI	VII	VIII	IX	X
W01	.49	.00	-.06	.03	.03	.02	.25	-.03	.12	.22
W03	.46	-.13	-.15	.00	.03	.00	.00	.20	.22	.22
W04	.51	.26	-.08	-.22	.12	-.14	.04	.13	-.02	.10
W05	.35	.10	.06	-.07	-.03	-.06	-.01	.07	.54	-.30
W06	.61	.10	-.07	.05	.00	-.02	.10	.00	.02	-.20
W09	.45	-.04	.00	.06	.04	.07	.30	.10	.14	.05
W010	.43	.12	.07	-.25	.09	.10	.10	.08	.49	.08
W011	.69	.02	-.12	.02	.00	-.04	.07	.08	-.13	-.12
W012	.52	.02	.11	-.12	.01	.01	.25	.10	.32	.03
Q6	.08	.70	.08	-.09	.00	-.19	-.10	-.02	.06	-.01
Q13	.06	.60	.00	-.09	.03	-.18	.00	.15	-.03	-.12
Q27	-.06	.54	.09	.03	.05	.00	.12	-.14	.03	-.11
Q34	-.02	.50	.02	-.06	.11	-.09	-.15	.22	.04	.12
W07	.19	.60	.11	-.16	.03	-.04	-.04	-.01	.17	-.13
Q3	.01	.20	.71	.04	-.04	.01	-.02	.02	.07	.13
Q10	-.09	.05	.57	-.05	-.17	.08	-.03	.06	-.05	.03
Q17	-.07	.00	.66	.07	-.14	.00	.03	-.03	.00	-.02
Q24	.00	-.01	.46	.14	-.05	.04	-.05	-.05	.03	-.01
Q31	-.06	.04	.42	.02	.01	.14	-.20	-.04	.12	-.10
Q7	-.03	-.06	.05	.59	-.03	.14	.11	.05	-.04	.00
Q14	-.05	-.07	-.04	.55	-.09	.04	.04	-.05	-.10	-.01
Q21	-.06	.00	.14	.47	.06	.08	-.01	-.11	.05	.10
Q28	.14	-.14	.04	.49	-.05	-.05	.11	.08	.12	.25
Q35	-.05	-.14	.08	.29	-.31	.32	.06	-.01	.00	-.05
Q4	.00	.10	-.11	-.03	.59	-.14	-.04	-.03	.07	.10
Q11	-.05	-.08	.01	-.01	.30	-.24	.13	.16	.00	.04
Q18	.04	.02	-.09	.05	.51	-.07	.06	.04	.00	-.08
Q25	.17	.15	-.07	-.25	.40	-.21	.13	.09	-.05	-.07
Q32	.06	.00	-.20	-.14	.45	-.05	.00	.05	.00	-.09
Q5	-.07	-.05	.22	-.08	-.13	.64	.00	-.16	-.06	-.04
Q12	.09	-.10	.01	.13	-.20	.55	.15	.07	.00	.09
Q19	-.05	-.14	.05	.08	.00	.68	-.02	-.22	.04	.00
Q26	-.11	.14	.13	.19	-.10	.22	.04	-.29	-.03	-.02
Q33	.03	-.24	-.04	.16	-.18	.55	-.01	.03	.03	.06
Q2	.15	.00	.02	.10	.02	.11	.32	.13	.03	.05
Q9	.13	.07	-.22	-.07	.06	.08	.56	.03	.00	-.05
Q16	.13	-.03	.10	.38	-.03	-.01	.38	-.01	.08	.01
Q23	.18	-.07	.02	.27	.17	-.08	.51	.00	.12	.09
Q30	.21	-.10	-.08	.10	-.01	-.02	.68	-.06	.11	-.02
Q1	.12	.00	.02	-.01	.00	-.11	-.05	.48	-.05	.32
Q8	.06	.25	.00	-.05	.07	-.12	.00	.18	.05	.01
Q15	.10	.13	.03	.11	.04	-.07	.10	.43	.04	-.04
Q22	.07	.04	.00	-.09	.04	-.06	.00	.61	.06	-.08
Q29	.19	.01	.00	.00	.09	-.15	.01	.33	.08	.06
W02	.00	.12	.05	.13	.01	.00	.18	.00	.59	.15
W08	.05	.17	-.05	-.16	.04	-.06	.00	-.01	-.06	-.37

the 47 items. The economic work-orientation item and the political work-orientation item did not have high loadings on any of the 8 factors. The factor analysis demonstrates that the OPSCI items and the OBI items are statistically distinct as well as conceptually distinct. Nine of the OBI items loaded highly on the first factor which accounted for 25.0% of the total variance. The power work-orientation item was the only item to load highly with the OPSCI items. The power work-orientation item loaded highly on the dominance-submissiveness scale.

Factor I accounted for 25.0% of the total variance; Factor II accounted for 18.0%; Factor III for 12.8%; Factor IV for 8.9%; Factor V for 7.5%; Factor VI for 5.3%; Factor VIII for 4.8%; and Factor VIII for 4.1%.

8.14 The relationship between the OPSCI scales and the OBI scales was an important issue in this study. The preceding analysis provides some support for the author's proposition that the OPSCI items and the OBI items are both conceptually and statistically distinct. However, the author decided that a better understanding of the relationship between the 7 OPSCI scales and the 12 OBI scales could be achieved by performing a canonical correlation analysis. Canonical correlation analysis takes as its basic input two sets of variables, each of which can be given theoretical meaning as a set. The basic function of correlation analysis is to explain as much as possible of one set of variables from another set of variables. The method of canonical correlation achieves this by simultaneously weighting both sets of variables, by means of two sets of regression weights, to arrive at two variates which correlate as highly as possible with each other.

In the present study, therefore, the canonical correlation analysis can produce a weighted linear combination of the 7 OPSCI scales which is "most predictable" from a weighted linear combination of the 12 OBI scales. The canonical correlation is the product-moment correlation between the variate of the OPSCI

scales, and the variate of the OBI scales, when both variates are derived from beta weights chosen to maximize that correlation. The number of canonical correlations which can be produced from that data represents the number of different ways of weighting the two sets of variables to obtain a significant relationship.

The SPSS subprogram CANCORR was used to perform the analysis. The canonical correlation analysis resulted in 4 statistically significant canonical variates which accounted for 98% of the variance between the two sets of variables. The first canonical correlation between OPSCI variables and OBI variables was 0.66 (X^2 = 517.85, df = 91, $p < .0001$) and the amount of variance shared by the two first canonical variates is 43%. In other words, this means that 43% of the variance of a specified weighted linear combination of OPSCI scales is predictable from a weighted linear combination of OBI scales. The amount of variance shared by the second canonical variates is 27% with a canonical correlation of 0.52 (X^2 = 283.67, df = 72, $p < .0001$). The amount of variance shared by the third canonical variates is 17% with a canonical correlation of 0.42 (X^2 = 152.61, df = 55, $p < .0001$), and the amount of variance shared by the fourth canonical variates is 10% with a canonical correlation of 0.32 (X^2 = 73.49, df = 40, $p < .001$). Table 77 presents the canonical variate coefficients for the OPSCI and OBI scales. An examination of the loadings of the individual canonical variates establishes some pattern to the relationship that exists between the OPSCI and OBI scale variables. The first canonical variates indicate that a specific kind of occupational persona profile can be predicted from specific occupational beliefs. The first canonical variate loads the dominance and elation dimensions with the power and self-fulfilling work orientations and a low affiliative work orientation. This variate appears to link the personality variables and beliefs which might identify strong leaders and organizers who are rather career-orientated.

The second canonical variates focus on the economic and security work orientations as predictors of the sociable, but dogmatic occupational persona. The economic and security beliefs appear

Table 77 Canonical Variate Coefficients for the OPSCI and OBI Scales

	Variable	Canonical Variable Coefficients			
		I	II	III	IV
OPSCI Variables	Sociability-Aloofness	.13	.34	-.54	.30
	Dogmatism-Adaptability	.28	.83	.17	-.43
	Aggression-Accommodation	-.17	.03	.31	-.53
	Stability-Instability	-.03	.03	-.21	-.07
	Tension-Relaxation	-.06	.00	-.08	-.43
	Dominance-Submissiveness	-.76	.34	.49	.28
	Depression-Elation	.42	-.11	.59	.73
OBI Variables	Existential	.15	.16	.13	-.28
	Economic	.14	.35	.40	.37
	Affiliative	.31	.03	-.40	.58
	Self-Fulfilling	-.32	.22	-.41	.23
	Socially Esteemed	-.01	-.05	.06	-.22
	Socially Obligated	.04	.08	.16	.28
	Power	-.72	.26	.43	.22
	Political	-.02	-.02	-.16	.00
	Security	.24	.30	.17	-.18
	Achievement	-.28	-.04	.28	-.55
	Altruistic	.15	.21	-.09	.28
	Self-Identity	.11	.25	-.16	-.44

to be linked with the image of the blue-collar worker who is unambitious and has an instrumental orientation to work.

The third canonical variates identify a more complex relationship between the occupational persona and occupational beliefs. High loadings on the depression, aloofness, dominance and aggression dimensions are linked to economic and power work orientations, and low affiliative, and low self-fulfilling work orientations. The OPSCI profile conjures up an image of a frustrated, unsatisfied worker, and the beliefs which best predict this profile focus on money and power and de-emphasize social relations and self actualization.

The fourth canonical variates do not present as clear or as comprehensible a pattern of relationships. A greater number of variables load on this variate and the pattern present does not appear to make much theoretical sense.

In summary, therefore, the findings do suggest that three specific types of occupational persona can be predicted from a weighted linear combination of occupational beliefs. The three occupational persona types seem to refer to a fulfilled leader or organizer type, an unambitious, sociable type, and an unfulfilled, frustrated, alientated type. It should also be noted that the distinction between the criteria and the predictor variables in the canonical correlation is a very arbitrary process. In other words, either set of the two sets of variables can be designated as the criteria or predictor variables. Consequently, the findings of the canonical correlation analysis also indicate the specific occupational belief profiles which can be predicted from a weighted linear combination of occupational persona traits.

It has already been stated that the 4 statistically significant canonical variates account for 98% of the variance in common between the two sets of variates. However, to obtain the proportion of variance in the OPSCI variables which is predictable,

or in common with, the OBI variables requires the computation of an index of redundancy. The concept of redundancy was developed to explain the common or shared variance between the two sets of variables. Weiss (1972) describes how the redundancy index can be computed. Very briefly the OPSCI variable-variate correlations were squared and summed, and that amount of variance is then divided by the total possible variance that could go into the sum (ie the total number of variables which is 7), and this gives the proportion of variance in the OPSCI variables explainable by the first canonical variate of the OBI variables. The sum of the redundancies for all the canonical correlations is the total redundancy of the OPSCI variables, or the proportion of variance in the OPSCI variables explainable by the OBI variables. The total redundancy index of the OPSCI variables indicates that 59.7% of the variance in the OPSCI variables was explainable by the OBI variables, and the four canonical correlations account for 12.7%, 13.0%, 15.0%, and 19.0% of the variance of the OPSCI variables respectively.

The index of redundancy is asymmetric in that the proportion of variance in the OPSCI variables explainable by the OBI variables is not the same as the proportion of variance in the OBI variables explainable by the OPSCI variables. Therefore, a second index of total redundancy was computed which indicated that 30.6% of the variance in the OBI variables was explainable by the OPSCI variables, and the four canonical correlations account for 7.7%, 3.8%, 7.5%, 11.6% of the variance of the OBI variables respectively.

These findings in relation to the total redundancy index enable a clearer description to be made of the relationship between the OPSCI and OBI variables. It does appear that no single canonical equation accounts for sufficient variance of either the OPSCI variables or OBI variables to be used in isolation for predictive purposes (even if these canonical correlations could be cross-validated). It does also appear that the OBI variables are better predictors of the OPSCI variables than vice versa. However, the

total redundancy indices are reasonably high indicating that about half the OPSCI variance can be "explained" by the OBI variables, and the particular patterning of the data suggests that three specific types of occupational persona can be predicted with some confidence from weighted linear combinations of occupational beliefs. The occupational belief profiles can be predicted from the OPSCI variables with less confidence but, even so, about a third of the OBI variance can be explained by the OPSCI variables.

A limitation of the canonical correlation analysis is that it tends to maximize sample-specific covariation to give results that are artificially inflated due to the unique characteristics of the sample. Accordingly, before a weighted linear combination of OPSCI scales or a weighted linear combination of OBI scales could be used for prediction purposes, the analysis would need to be replicated and cross-validated on another sample. Nevertheless, at this stage of their development, the OPSCI scales and OBI scales relate to each other in sensible ways, and thus provides further information on their construct validity.

8.15 The influence of sex on the OPSCI profile and the OBI profile has still to be examined. It is an important personal variable, and its relationship with the OPSCI and OBI scales has been isolated for separate analysis. The relationship was analysed by using a discriminant analysis. This analysis, of course, has the function of statistically distinguishing between the two groups of cases, males and females. The SPSS DISCRIMINANT program was used to analyse the data, and the direct method was employed in which all the independent variables are entered into the analysis concurrently. The discriminant analysis resulted in only one significant discriminant function which accounts for 26% of the total dispersion. After removing the first function a lambda which is significant at the .01 level is found. This indicates that it would not be very useful to derive the second and third discriminant function, since they would not significantly add to our ability to discriminate between the sexes.

The means, standard deviations, and standardized discriminant function coefficients are presented in Table 78. Table 79 presents the sex group means in the discriminant space. The location of the male group at the positive end of this function indicates that the males tended to score higher on the aggression and stability dimensions, and appeared to have more central socially obligated, economic and power orientations to work. The location of the female group at the negative end of the function suggests that females tended to score higher on the sociability dimension, and tended to have more central affiliative, altruistic and security orientations to work.

Predicted classifications from the above procedure can be related to actual group membership to obtain a "hit-miss" table as presented in Table 80. The overall "hit" rate is the proportion of actual members of each sex group who are predicted, on the basis of the discriminant function equation, to be in that sex group. There is, of course, overlap between the groups but the classification routine was able to correctly identify 73.2% of the sample to the sex group to which they actually belonged.

However, the discriminant weights tend to be chosen to maximize the number of correct classifications, and so the results again tend to be artificially inflated because they are sample-specific. Consequently, there is a need for cross-validation before the linear discriminant function equation is used for prediction purposes. It is clear, however, that OPSCI and OBI scales differentiate between the sexes in "expected" ways, and this is obviously satisfactory in the context of the scales' construct validation.

8.16 A major objective of this study was to examine the empirical implications for the author's occupational belief systems model of occupational choice and occupational behaviour. The author's occupational belief systems model makes three predictions about the relationships between occupational behaviour, the occupational persona and occupational beliefs. Firstly, that individuals who

Table 78 Means and SDs of the Sex Groups

	Sex				Standardized Discriminant Function Coefficients
	Male		Female		
	Mean	SD	Mean	SD	
Sociability-Aloofness	8.24	1.73	8.47	1.39	-.17
Dogmatism-Adaptability	6.38	2.38	5.94	2.55	.18
Aggression-Accommodation	5.08	2.87	3.85	2.51	.39
Stability-Instability	7.30	2.05	6.94	2.38	.34
Tension-Relaxation	3.38	2.58	3.14	2.64	.11
Dominance-Submissiveness	6.50	2.15	5.68	2.43	.11
Depression-Elation	4.43	2.53	4.30	2.64	.10
Existential	3.52	1.38	3.44	1.21	.05
Economic	4.18	.87	3.82	1.03	.29
Affiliative	3.21	1.14	3.67	.92	-.49
Self-Fulfilling	3.87	.99	3.88	.88	.00
Socially Esteemed	3.21	1.15	2.91	1.16	.07
Socially Obligated	3.49	1.08	3.04	1.14	.58
Power	3.28	1.07	2.85	1.03	.26
Political	3.03	1.16	2.94	1.05	.00
Security	3.20	1.17	3.24	1.24	-.22
Achievement	3.71	.98	3.44	1.06	.18
Altruistic	3.25	1.07	3.42	.99	-.29
Self-Identity	3.98	.93	3.80	1.02	.01

Table 79 Sex Group Means in the Discriminant Space

Sex	I
Male	.32
Female	-.82

Table 80 Classification Matrix for Sex Group

Actual Group	Predicted Group Membership % Group Hits		
	N	1	2
Male	305	73.4	26.6
Female	117	27.4	72.6

% Correct Group Classifications = 73.2%

display different patterns of work behaviour will significantly differ in certain beliefs about work, and significantly differ in the profile of their occupational persona. Secondly, that individuals who display different beliefs about work will significantly differ in their patterns of work behaviour, and significantly differ in the profile of their occupational persona. Thirdly, that individuals who display different occupational persona profiles will significantly differ in their patterns of work behaviour, and significantly differ in certain beliefs about work.

Section 7.6 has already outlined the problems associated with how occupational behaviour was to be measured. The author finally decided to incorporate four different measures of occupational behaviour in his research questionnaire, in the hope that the strength of the author's theory would be increased if the experimental effect can be demonstrated in different ways. The four measures of occupational behaviour were current occupational choice, reasons for leaving jobs, and career patterns analyzed in two different ways: a ratio of vertical moves to horizontal moves, and a classification system based on an individual's stable, unstable, multiple-trial, or conventional work history. The following sections, therefore, will explore the relationships between occupational beliefs, the occupational persona and occupational behaviour as interpreted in these four different ways.

Firstly, the author examined the relationship between current occupational choice, and the OPSCI and OBI scales, as the respective research measures of the occupational persona and occupational beliefs. The data was analyzed by a multiple discriminant analysis, and again the SPSS DISCRIMINANT program was employed to analyze the data. The multiple discriminant analysis has the function of statistically differentiating between the 5 classified occupational groupings: professional and senior management; line management and technical; commercial and personal services; skilled; and semi-skilled and unskilled.

The direct method was used in which all the independent variables are entered into the analysis concurrently. The multiple discriminant analysis resulted in only two significant discriminant functions which jointly account for 63% of the total variance. After removing the first two discriminant functions a lambda of .01 is computed which suggests that any further discriminant functions would not significantly add to our ability to differentiate between the 5 occupational groups. The means and standard deviations of the variables are presented in Table 81, and the standardized discriminant function coefficients are listed in Table 82. As the coefficients have been standardized they reflect the relative importance of each variable in differentiating among the 5 occupational groups. Table 83 shows the centroids or group means of the 5 occupational groups which are plotted in Figure 3.

The first discriminant function produced a chi-square value of 122.55, and accounted for 45% of the total dispersion. Inspection of Figure 3 indicates how clearly this function differentiates between the five occupational groups. The location of the professional and line management groups on the negative end of the first function indicates that they tended to score lower on the dogmatism, depression and sociability dimensions, and tend to have less central affiliative and security orientations to work. The location of the skilled and unskilled workers on the positive end of the first function suggests that these workers have less central political, power and socially obligated orientations to work.

The second discriminant function produced a chi-square value of 55.83, and accounted for 18% of the total dispersion. Figure 3 illustrates how clearly this function differentiates between the five occupational groups. The positive centroids of the professional, line management and skilled workers indicate that they tended to score higher on the dominance-submissiveness dimension, and tend to be less concerned with affiliative orientations to work. The negative centroids of the commercial

Table 81 Means and SDs of the Occupational Groups

Variable	Occupational Groups									
	Professional		Management		Commercial		Skilled		Semi-Unskilled	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Sociability-Aloofness	7.38	1.79	8.45	1.63	8.57	1.49	8.44	1.41	8.17	1.72
Dogmatism-Adaptability	4.64	2.47	5.45	2.12	6.19	2.37	7.18	2.29	7.83	1.95
Aggression-Accommodation	5.31	2.63	4.82	2.66	4.11	2.67	5.05	3.07	5.07	3.12
Stability-Instability	7.10	2.10	7.52	1.93	6.99	2.48	7.21	2.12	7.09	2.01
Tension-Relaxation	3.57	2.53	3.04	2.38	3.31	2.70	2.44	2.29	4.00	2.74
Dominance-Submissiveness	6.29	2.36	6.95	1.92	6.08	2.37	6.59	2.04	5.48	2.31
Depression-Elation	4.10	2.49	3.49	2.28	4.51	2.53	4.26	2.45	5.74	2.47
Existential	2.93	1.28	3.43	1.31	3.48	1.34	3.82	1.37	3.72	1.31
Economic	4.07	0.95	4.14	0.86	3.88	1.04	4.05	1.00	4.30	0.77
Affiliative	2.76	1.14	3.26	1.06	3.62	0.99	3.05	1.12	3.48	1.13
Self-Fulfilling	3.93	0.78	3.92	0.93	3.88	1.01	3.92	0.87	3.78	1.03
Socially Esteemed	3.38	1.01	3.25	1.12	2.85	1.21	3.44	1.10	3.05	1.19
Socially Obligated	3.50	1.02	3.34	1.11	3.24	1.15	3.77	1.04	3.33	1.14
Power	3.55	1.06	3.44	1.01	2.91	1.02	3.28	1.12	2.83	1.09
Political	3.38	1.03	3.24	1.03	2.98	1.10	2.92	1.09	2.55	1.21
Security	2.69	1.20	2.99	1.12	3.25	1.24	3.46	1.19	3.59	1.10
Achievement	3.36	0.91	3.71	0.94	3.59	1.09	3.82	1.02	3.65	1.04
Altruistic	3.33	0.98	3.10	1.07	3.44	1.04	3.64	0.90	3.24	1.07
Self-Identity	3.76	0.98	3.90	0.88	3.84	1.05	4.15	0.84	4.07	0.96

Table 82 Standardized Discriminant Function Coefficients for Occupational Groups Using OPSCI and OBI Scales as Criteria

Variable	Discriminant Function			
	I	II	III	IV
Sociability-Aloofness	-.11	.43	.28	.08
Dogmatism-Adaptability	-.71	-.19	.35	.05
Aggression-Accommodation	-.04	-.34	.12	.12
Stability-Instability	.14	-.24	-.11	.43
Tension-Relaxation	.12	.11	-.43	.45
Dominance-Submissiveness	.13	.43	.28	.11
Depression-Elation	-.30	-.25	-.33	-.13
Existential	.07	.12	.44	.09
Economic	.16	-.27	-.22	.37
Affiliative	-.21	.60	-.34	.31
Self-Fulfilling	-.05	-.23	-.34	.00
Socially Esteemed	.17	-.35	.23	-.04
Socially Obligated	.22	-.23	.14	.03
Power	.25	-.33	-.04	.07
Political	.31	.23	-.11	.00
Security	-.20	.03	.00	.00
Achievement	-.12	.20	.27	-.09
Altruistic	.03	-.08	-.17	-.80
Self-Identity	.02	-.08	-.04	.07

Table 83 Occupational Group Means in the Discriminant Space

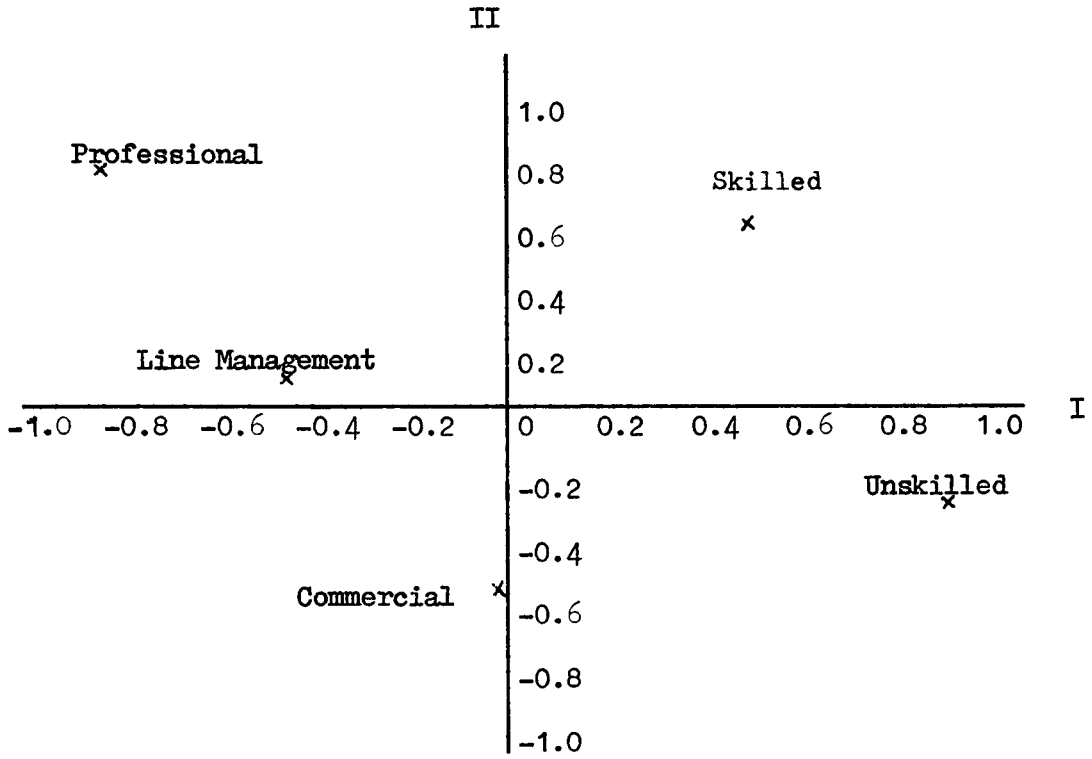
Occupational Group	Axis			
	I	II	III	IV
Professional/Senior Management	-.91	.84	.64	.15
Line Management/Technical	-.50	.17	-.35	.26
Commercial/Personal Services	-.02	-.51	-.08	-.34
Skilled	.49	.64	-.23	-.37
Semi-skilled/Unskilled	.92	-.24	.38	.14

Table 84 Classification Matrix for Five Occupational Groups

Occupational Group	% Group Hits				
	1	2	3	4	5
1. Professional/Senior Management	71.4	9.5	4.8	7.1	7.1
2. Line Management/Technical	18.5	37.7	20.8	14.6	8.5
3. Commercial/Personal Services	9.5	11.2	40.5	12.9	25.9
4. Skilled	7.7	15.4	7.7	48.7	20.5
5. Semi-skilled/Unskilled	8.5	8.5	11.7	13.8	57.4

% Correct Group Classifications - 47.27%

Figure 3 Centroids of Five Occupational Groups on Discriminant Functions I and II



and unskilled workers on this function suggest that they tend both to score lower on the stability-instability dimension, and commercial workers score lower on the aggression-accommodation dimension. The commercial and unskilled workers both appear to have less central socially esteemed, socially obligated, power and self-fulfilling work orientations. Commercial workers also place less emphasis on economic orientations to work.

The variables with the most discriminating power were in order of importance the dogmatic-adaptability scale, the depression-elation scale, the political, power, socially obligated and affiliative orientations to work. The variables with very little discriminating power were in order of least importance the self-identity and altruistic orientations to work, and the aggression-accommodation dimension.

Another way of analyzing discriminant efficiency is to calculate the percentage of actual cases from the occupational group which are correctly predicted by the disciminant analysis. Table 84 presents the results of this classification for the 5 occupational groups. 71.4% of professional workers and 57.4% of unskilled workers were correctly predicted but there was rather more overlap in the other groups. The discriminant analysis was least effective in predicting the line management/technical group. This finding was not surprising as this group tend to have less clearly defined role activities, and the mean age of this group in this sample tended to be rather young and their "formal occupational role" may have still been in the developmental stage. However, overall the discriminant analysis was able to correctly identify 47.3% of the cases as members of the groups to which they actually belong. More importantly for the empirical implications of the author's occupational belief systems model, different occupational groupings were demonstrated to be significantly different in terms of their occupational persona profile, and certain occupational beliefs.

8.17 The second measure of occupational behaviour adopted by the

author was an analysis of career patterns in which an individual's work history was classified as stable, unstable, multiple-trial or conventional. Section 7.6 outlines how these categories were defined. The following section examines the relationship between occupational behaviour as measured by stable, unstable, multiple-trial or conventional career patterns, and the OPSCI and OBI scales as the respective research measures of the occupational persona and occupational beliefs.

The data was analyzed by a multiple discriminant analysis, and again the SPSS DISCRIMINANT program was employed to analyze the data. The multiple discriminant analysis has the function of statistically differentiating between the four types of career pattern. The direct method was used in which all the independent variables are simultaneously entered into the analysis.

The multiple discriminant analysis resulted in three discriminant functions of which only the first was statistically significant. Following the removal of the first discriminant function a lambda of .01 is computed which indicates that any further discriminant functions would not significantly add to our ability to differentiate between the four types of career pattern. The means and standard deviations of the variables are presented in Table 85. Table 86 shows the standardized discriminant function coefficients, and the centroids or group means of the four career patterns are listed in Table 87 and plotted in Figure 4.

The first discriminant function accounts for 32% of the total dispersion, and inspection of Figure 4 indicates that this first function differentiates clearly between the unstable group and the other three career patterns. This function does not differentiate well between the stable, multiple-trial and conventional career patterns. The location of the unstable group at the negative end of the function indicates that individuals with an unstable career pattern tended to score higher on the tension-relaxation dimension, and score lower on the dominance-submissiveness dimension. Individuals with an unstable career

Table 85 Means and SDs for Career Pattern

Variable	Career Patterns							
	Stable		Unstable		Multiple Trial		Conventional	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Sociability-Aloofness	8.28	1.83	8.27	1.58	8.49	1.51	8.18	1.69
Dogmatism-Adaptability	6.11	2.64	6.07	2.24	6.86	2.38	5.64	2.35
Aggression-Accommodation	4.56	2.64	4.25	2.86	5.35	3.01	5.38	2.50
Stability-Instability	7.41	2.06	7.02	2.33	7.30	2.02	7.04	2.12
Tension-Relaxation	2.83	2.36	4.05	2.55	2.74	2.62	3.22	2.49
Dominance-Submissiveness	6.95	2.08	5.41	2.27	6.60	2.11	6.22	2.05
Depression-Elation	4.30	2.70	4.53	2.55	4.37	2.51	4.04	2.23
Existential	3.50	1.36	3.41	1.30	3.58	1.37	3.44	1.39
Economic	4.15	0.91	4.01	0.94	4.13	0.97	4.14	0.78
Affiliative	3.10	1.20	3.60	0.96	3.25	1.12	3.26	1.12
Self-Fulfilling	3.95	1.01	3.85	0.89	3.75	1.08	4.04	0.75
Socially Esteemed	3.26	1.17	2.96	1.19	3.18	1.20	3.20	0.95
Socially Obligated	3.35	1.15	3.17	1.09	3.50	1.12	3.62	1.07
Power	3.39	1.09	2.94	1.02	3.13	1.16	3.38	0.97
Political	3.35	1.08	2.67	1.00	3.10	1.18	3.02	1.22
Security	3.10	1.29	3.15	1.17	3.38	1.13	3.14	1.16
Achievement	3.50	1.03	3.68	0.99	3.74	1.03	3.58	1.03
Altruistic	3.19	1.16	3.29	0.98	3.32	1.06	3.38	0.99
Self-Identity	3.90	1.03	3.80	0.99	4.15	0.84	3.88	0.90

Table 86 Standardized Discriminant Function Coefficients for Career Pattern Using OPSCI and OBI Scales as Criteria

Variables	Standardized Discriminant Function Coefficients		
	I	II	III
Sociability-Aloofness	-.11	-.16	.17
Dogmatism-Adaptability	.15	-.50	.29
Aggression-Accommodation	.26	-.35	-.65
Stability-Instability	.01	.05	.13
Tension-Relaxation	-.42	.26	-.03
Dominance-Submissiveness	.51	.04	-.04
Depression-Elation	.02	.13	.40
Existential	.18	.12	.16
Economic	.04	.27	-.28
Affiliative	-.31	-.18	-.16
Self-Fulfilling	-.22	.53	-.17
Socially Esteemed	.14	.18	.22
Socially Obligated	.16	.03	-.64
Power	-.11	.37	.10
Political	.38	.09	.32
Security	.05	-.05	-.12
Achievement	-.27	-.38	.16
Altruistic	-.08	-.07	-.25
Self-Identity	.31	-.27	.18

Table 87 Career Pattern Group Means in the Discriminant Space

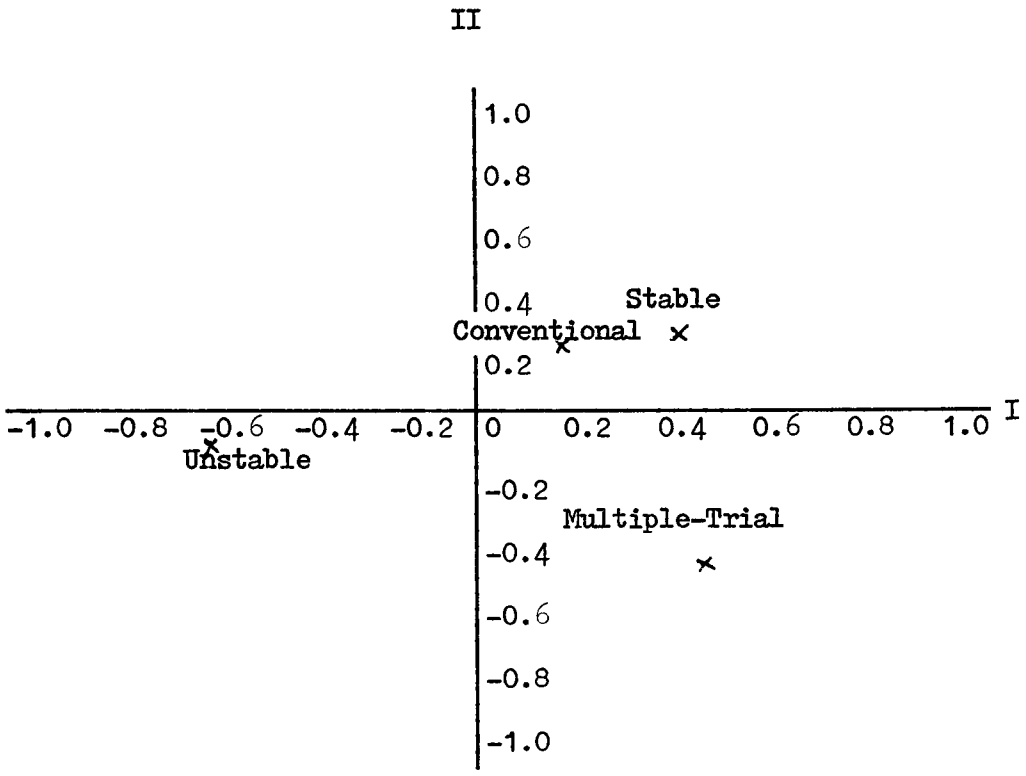
Career Pattern	Axis		
	I	II	III
Stable	.40	.32	.18
Unstable	-.65	-.03	.04
Multiple-Trial	.44	-.41	-.01
Conventional	.14	.28	-.48

Table 88 Classification Matrix for Four Types of Career Pattern

Career Pattern	% Group Hits			
	1	2	3	4
1. Stable	40.4	19.3	24.8	15.6
2. Unstable	10.0	63.3	12.7	14.0
3. Multiple-Trial	16.0	17.9	51.9	14.2
4. Conventional	22.0	20.0	26.0	32.0

% Correct Group Classifications = 50.6%

Figure 4 Centroids of the Four Career Patterns on Discriminant Functions I and II



pattern also seemed to place less emphasis on political and self-identity orientations to work, and more emphasis on affiliative orientations to work. The variables which have the greatest discriminating power between the unstable group and the other three types of career pattern were in order of importance the dominance-submissiveness scale, the political work orientation, the tension-relaxation scale and the affiliative work orientation.

The discriminant efficiency was also analyzed by calculating the percentage of actual cases from the four types of career pattern which are correctly predicted by the discriminant analysis. Table 88 presents the results of this classification for the four types of career pattern. 63.3% of the unstable group were correctly predicted, and overall 50.6% of the career pattern groups were correctly predicted. The conventional career pattern group seemed the most difficult to correctly identify.

The empirical findings again support the major proposition of the author's occupational belief systems model in that different types of career pattern were demonstrated to be significantly different in terms of their occupational persona profile, and certain occupational beliefs. However, the OPSCI and OBI scales differentiated less well between these types of career pattern than the 5 occupational groupings.

8.18 The author also adopted as a measure of occupational behaviour another analysis of career patterns by calculating the ratio of vertical moves to horizontal moves for each individual. The problems associated with this criterion are outlined in section 7.15. The following section examines the relationship between occupational behaviour, as measured by this vertical to horizontal moves ratio, and the OPSCI and OBI scales as the respective research measures of the occupational persona and occupational beliefs.

The data was analyzed by a discriminant analysis, and again the SPSS DISCRIMINANT program was used to analyze the data. The function of this analysis was to statistically differentiate between two types of career pattern; that is, a pattern predominated by vertical career moves and a pattern predominated by horizontal moves. The direct method of discriminant analysis was used and resulted in only one statistically significant discriminant function. This function accounted for only 19% of the total dispersion. The means, standard deviations, and standardized discriminant function coefficients are presented in Table 89, and the centroids or group means of the two groups are presented in Table 90.

The location of the vertical career pattern group on the positive end of the discriminant function indicates that this group tended to score higher on the socially esteemed, power, political and achievement work orientations, and score lower on the dogmatism-adaptability, and the depression-elation dimensions. The variables with the greatest discriminating power were in order of importance the dogmatism-adaptability scale, the depression-elation scale and the socially esteemed work orientation. The discriminant efficiency was again checked by calculating the percentage of actual cases which were correctly predicted by the discriminant analysis. Overall 66.6% of the two groups were correctly predicted.

Although the OPSCI and OBI scales explained considerably less variance between these 2 types of career pattern than the 2 other measures of occupational behaviour examined, the findings continue to support the author's occupational belief systems model. A discriminant function significantly differentiated between the two types of career pattern in terms of the occupational persona profile and occupational beliefs.

8.19 The fourth and final measure of occupational behaviour adopted by the author was an analysis of the reasons individuals gave for leaving jobs. Section 7.16 discusses how the author

Table 89 Standardized Discriminant Function Coefficients for Horizontal/Vertical Career Patterns Using OPSCI and OBI Scales as Criteria

Variable	Career Patterns				Standardized Discriminant Function Coefficients
	Horizontal		Vertical		
	Mean	SD	Mean	SD	I
Sociability-Aloofness	8.38	1.57	8.19	1.79	-.13
Dogmatism-Adaptability	6.71	2.38	5.20	2.23	-.61
Aggression-Accommodation	4.68	2.91	4.91	2.67	-.02
Stability-Instability	7.15	2.18	7.33	2.11	.11
Tension-Relaxation	3.36	2.65	3.20	2.44	.16
Dominance-Submissiveness	6.09	2.35	6.71	1.97	.10
Depression-Elation	4.79	2.55	3.49	2.36	-.35
Existential	3.56	1.34	3.33	1.32	.11
Economic	4.08	0.95	4.11	0.87	.09
Affiliative	3.39	1.12	3.22	1.05	-.11
Self-Fulfilling	3.85	0.99	3.92	0.90	-.02
Socially Esteemed	3.02	1.19	3.35	1.09	.32
Socially Obligated	3.41	1.13	3.25	1.08	-.09
Power	3.04	1.10	3.43	0.98	.17
Political	2.91	1.15	3.19	1.05	.14
Security	3.31	1.21	2.96	1.13	-.09
Achievement	3.60	1.09	3.74	0.83	.13
Altruistic	3.35	1.03	3.14	1.07	-.10
Self-Identity	3.96	1.00	3.85	0.86	-.09

Table 90 Career Pattern Group Means in the Discriminant Space

Career Pattern	Axis I
Horizontal Career Pattern	-.27
Vertical Career Pattern	.60

classified the different reasons given for leaving jobs into 6 categories. The categories were labelled domestic and personal; organizational conflict and dissatisfaction; personal job dissatisfaction; lateral transfers and redundancies; job advancement; and training and education advancement. The following section examines the relationship between occupational behaviour, as measured by an analysis of reasons for leaving jobs, and the OPSCI and OBI scales as the respective research measures of the occupational persona and occupational beliefs. The data was analyzed by a multiple discriminant analysis and the SPSS DISCRIMINANT program was used to analyze the data. The direct method of multiple discriminant analysis was used in all cases. However, only the reasons for leaving the first and second jobs produced discriminant functions. The numbers in some categories became very small after the third and fourth jobs.

The multiple discriminant analysis of reasons for leaving the first job resulted in two statistically significant discriminant functions at the 0.05 level of probability. The first function produced a chi-square value of 92.38, and accounted for 22% of the total dispersion. The means and standard orientations of the variables are presented in Table 91. Table 92 shows the standardized discriminant function coefficients, and the centroids of the 6 categories are listed in Table 93 and plotted in Figure 5. Inspection of Figure 5 indicates that the first function differentiates most clearly the domestic/personal and lateral transfer/redundancy categories from the job advancement and training/education advancement categories. The domestic/personal and lateral transfer/redundancy categories seemed to include individuals who scored much higher on the dogmatism-adaptability dimension. The job advancement and the training/education advancement categories tended to include individuals who scored higher on the dominance-submissiveness dimension. Interestingly, the job advancement and lateral transfer categories shared more central socially obligated and self-identity orientations to work.

Table 91 Means and Standard Deviations of Reasons for Leaving the First Job

Variable	Reasons for Leaving Jobs											
	Dom/Personal		Org Con/Diss		Pers Job Diss		Lat Transfer		Job Advan		Train/Ed Advan	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Sociability-Aloofness	8.4	1.5	8.1	1.7	7.9	1.6	8.7	1.3	8.4	1.6	8.3	1.8
Dogmatism-Adaptability	7.3	1.9	6.3	2.2	6.0	2.4	7.5	2.2	5.4	2.4	5.3	1.9
Aggression-Accommodation	4.0	2.8	5.8	2.5	5.0	2.9	4.6	2.9	5.1	2.7	4.5	2.5
Stability-Instability	7.0	2.2	7.0	2.4	7.0	2.1	7.6	1.9	7.2	2.4	7.2	2.1
Tension-Relaxation	3.8	2.8	3.7	3.3	3.6	2.3	2.6	2.4	2.7	2.4	3.8	2.4
Dominance-Submissiveness	5.5	2.5	5.9	2.0	6.2	2.3	6.3	2.0	7.0	1.9	6.5	1.9
Depression-Elation	4.6	2.5	5.1	2.3	4.5	2.4	4.6	2.4	4.1	2.7	3.5	2.2
Existential	3.8	1.0	3.0	1.7	3.5	1.2	3.8	1.3	3.2	1.4	3.2	1.2
Economic	4.0	0.9	4.1	0.8	4.0	0.9	4.2	0.8	4.0	0.9	3.9	1.0
Affiliative	3.5	1.1	3.2	1.1	3.3	1.0	3.4	1.0	3.1	1.1	3.3	0.9
Self-Fulfilling	3.8	0.8	3.9	1.0	3.6	1.1	4.0	0.9	3.9	0.9	3.9	0.9
Socially Esteemed	3.0	1.1	2.5	1.1	3.0	1.2	3.3	1.2	3.3	1.1	3.2	1.1
Socially Obligated	3.2	1.1	3.0	1.2	3.2	1.1	3.6	1.0	3.5	1.0	3.3	1.0
Power	2.8	1.0	3.0	1.2	3.1	1.1	3.2	1.1	3.3	1.0	3.1	1.0
Political	3.0	1.1	2.8	1.2	2.8	1.1	2.8	1.1	3.2	1.1	2.8	0.9
Security	3.3	1.1	3.5	1.4	3.3	1.2	3.5	1.1	2.9	1.2	2.9	1.0
Achievement	3.5	1.0	3.5	1.2	3.6	1.0	3.8	1.0	3.5	0.9	3.7	0.9
Altruistic	3.4	0.9	3.0	1.2	3.2	0.9	3.5	0.9	3.1	1.0	3.3	1.0
Self-Identity	3.9	1.0	3.9	1.0	3.7	1.0	4.1	0.9	4.0	0.9	3.8	0.7

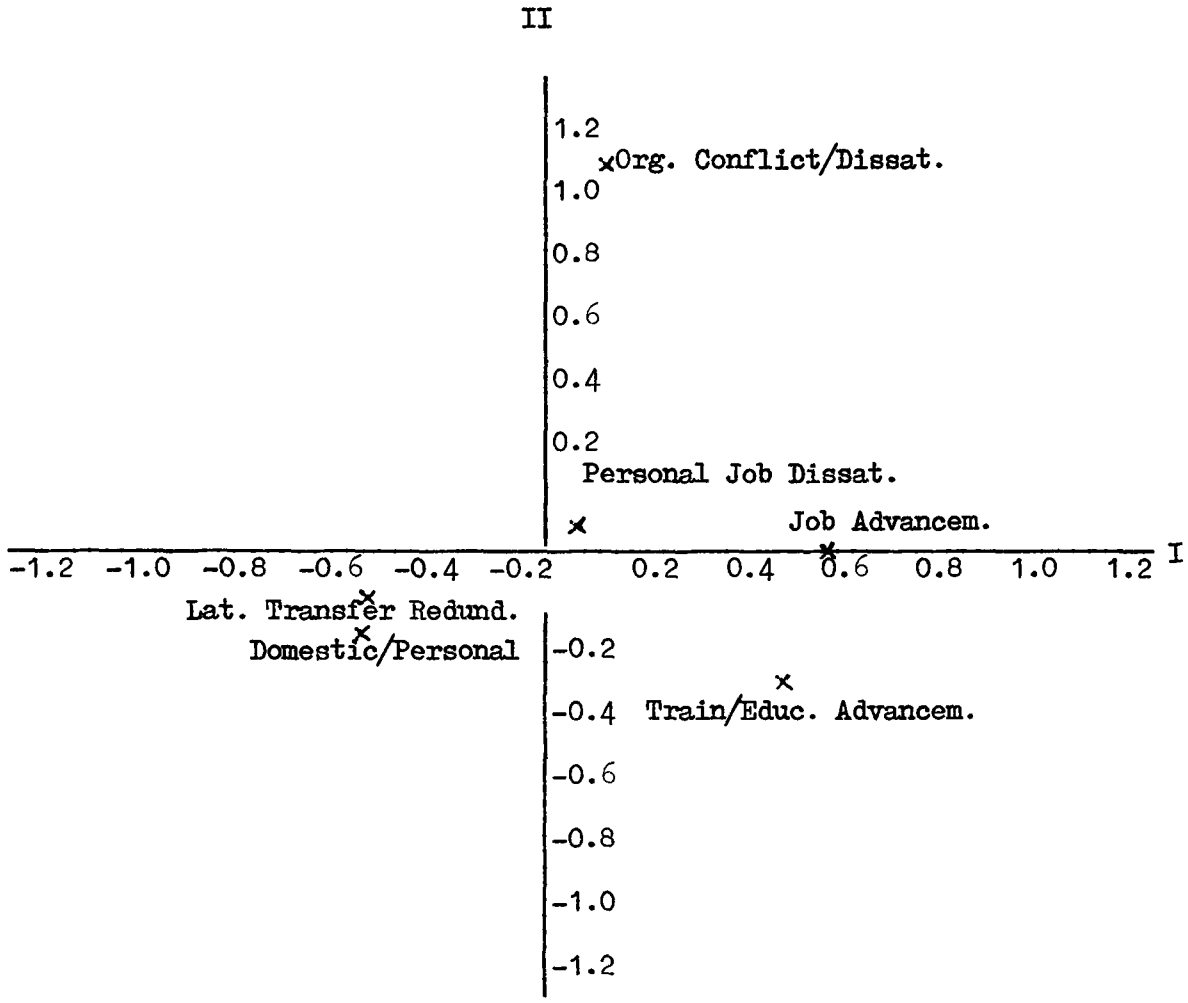
Table 92 Standardized Discriminant Function Coefficients for Reasons for Leaving the First Job Using OPSCI and OBI Scales as Criteria

Variable	Standardized Discriminant Function Coefficients	
	I	II
Sociability-Aloofness	-.15	-.16
Dogmatism-Adaptability	-.81	-.06
Aggression-Accommodation	.05	.44
Stability-Instability	.05	.09
Tension-Relaxation	.13	-.14
Dominance-Submissiveness	.42	-.20
Depression-Elation	.00	.33
Existential	-.12	-.54
Economic	-.03	.31
Affiliative	-.05	.03
Self-Fulfilling	.01	.46
Socially Esteemed	.08	-.62
Socially Obligated	.24	-.12
Power	-.05	.14
Political	.10	.09
Security	-.13	.51
Achievement	.00	-.11
Altruistic	-.19	-.19
Self-Identity	.21	.20

Table 93 Group Means in the Discriminant Space

	Axis	
	I	II
Domestic/Personal	-.58	-.17
Organizational Conflict/Dissatisfaction	-.07	1.09
Personal Job Dissatisfaction	.04	.03
Lateral Transfer/Redundancies	-.53	-.08
Job Advancement	.58	.00
Training/Education Advancement	.45	-.30

Figure 5 Centroids of the Six Categories for Leaving the First Job on Discriminant Functions I and II



The second discriminant function produced a chi-square value of 57.14, and only accounted for 11% of the total dispersion. The variables with the most discriminating power on this function were the socially esteemed, existential, security, and self-fulfilling work orientations, and the aggression-accommodation dimension. Individuals in the organizational conflict/dissatisfaction, personal job dissatisfaction and job advancement categories tended to score higher on the aggression-accommodation dimension. The domestic/personal and lateral transfer groups had a more central existential orientation to work. The job advancement and training/educational advancement groups had a less central security work orientation. The job, training/educational advancement and lateral transfer groups also tended to have more central socially esteemed and self-fulfilling work orientations.

The multiple discriminant analysis of reasons for leaving the second job resulted in two statistically significant discriminant functions at the 0.05 level. The first discriminant function produced a chi-square value of 92.26, and accounted for 25% of the total dispersion. The means and standard deviations of the variables are presented in Table 94. Table 95 shows the standardized discriminant function coefficients, and the group means or centroids of the 6 categories are listed in Table 96 and plotted in Figure 6. The first function differentiates very clearly the job advancement and training/educational advancement categories from the other four categories. Individuals in these 2 groups scored considerably lower on the depression-elation dimension and the dogmatism-adaptability dimension, and they placed less emphasis on an economic work orientation.

The second function produced a chi-square value of 56.81 and accounted for 15% of the total dispersion. This function was interesting in the way it differentiated between the training/educational advancement group and the job advancement group and Figure 6 reveals them at extreme ends of the axis. Individuals in the job advancement group tended to score higher on the stability-instability dimension, and lower on the tension-

Table 94 Means and Standard Deviations of Reasons for Leaving the Second Job

Variable	Reasons for Leaving Jobs											
	Dom/Personal		Org Con/Diss		Pers Job Diss		Lat Transfer		Job Advan		Train/Ed Advan	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Sociability-Aloofness	8.4	1.4	8.3	1.7	7.8	1.9	8.5	1.5	8.2	1.6	8.3	1.2
Dogmatism-Adaptability	6.9	2.3	6.5	2.2	6.7	2.3	6.7	2.4	5.6	2.3	5.2	1.8
Aggression-Accommodation	4.5	2.8	5.9	2.6	5.0	3.1	4.9	3.0	4.8	2.5	5.0	3.1
Stability-Instability	7.6	2.2	6.5	2.6	6.9	1.8	7.4	2.3	7.7	2.1	6.3	2.3
Tension-Relaxation	3.6	2.4	3.0	2.9	3.7	2.7	3.1	2.7	2.2	2.2	4.0	2.2
Dominance-Submissiveness	6.5	2.1	6.1	2.4	5.9	2.1	5.7	2.2	7.3	2.2	6.0	1.7
Depression-Elation	4.8	2.3	4.7	1.5	5.2	2.8	7.9	2.5	3.2	2.3	2.8	1.6
Existential	3.5	1.4	3.2	1.5	3.4	1.4	3.7	1.2	3.4	1.2	3.4	1.0
Economic	4.2	0.8	3.8	1.0	4.1	0.8	4.1	0.9	3.9	0.9	3.8	1.2
Affiliative	3.4	1.2	3.5	1.1	3.2	1.1	3.4	1.1	2.9	1.1	3.3	0.7
Self-Fulfilling	3.8	1.0	3.7	1.0	3.6	1.1	3.8	1.0	3.9	0.9	3.9	0.7
Socially Esteemed	3.0	1.2	3.1	0.8	2.8	1.2	3.2	1.2	3.3	1.0	3.0	1.1
Socially Obligated	3.2	1.3	3.7	1.0	3.1	1.2	3.6	1.0	3.4	0.9	3.3	1.0
Power	2.9	1.1	2.8	1.1	2.9	1.1	3.0	1.1	3.4	1.0	3.2	0.9
Political	2.8	1.2	3.0	1.1	2.7	1.3	3.0	1.1	3.3	1.1	2.5	0.7
Security	3.2	1.3	3.6	1.1	3.3	1.1	3.5	1.1	3.1	1.1	3.0	1.0
Achievement	3.5	1.3	3.7	1.1	3.3	1.1	3.9	0.9	3.6	0.8	3.6	0.7
Altruistic	3.2	1.0	3.4	1.1	3.2	1.1	3.4	0.9	3.2	1.0	3.5	0.7
Self-Identity	4.0	1.2	3.9	1.1	3.7	1.1	4.1	0.8	3.9	0.8	3.8	0.7

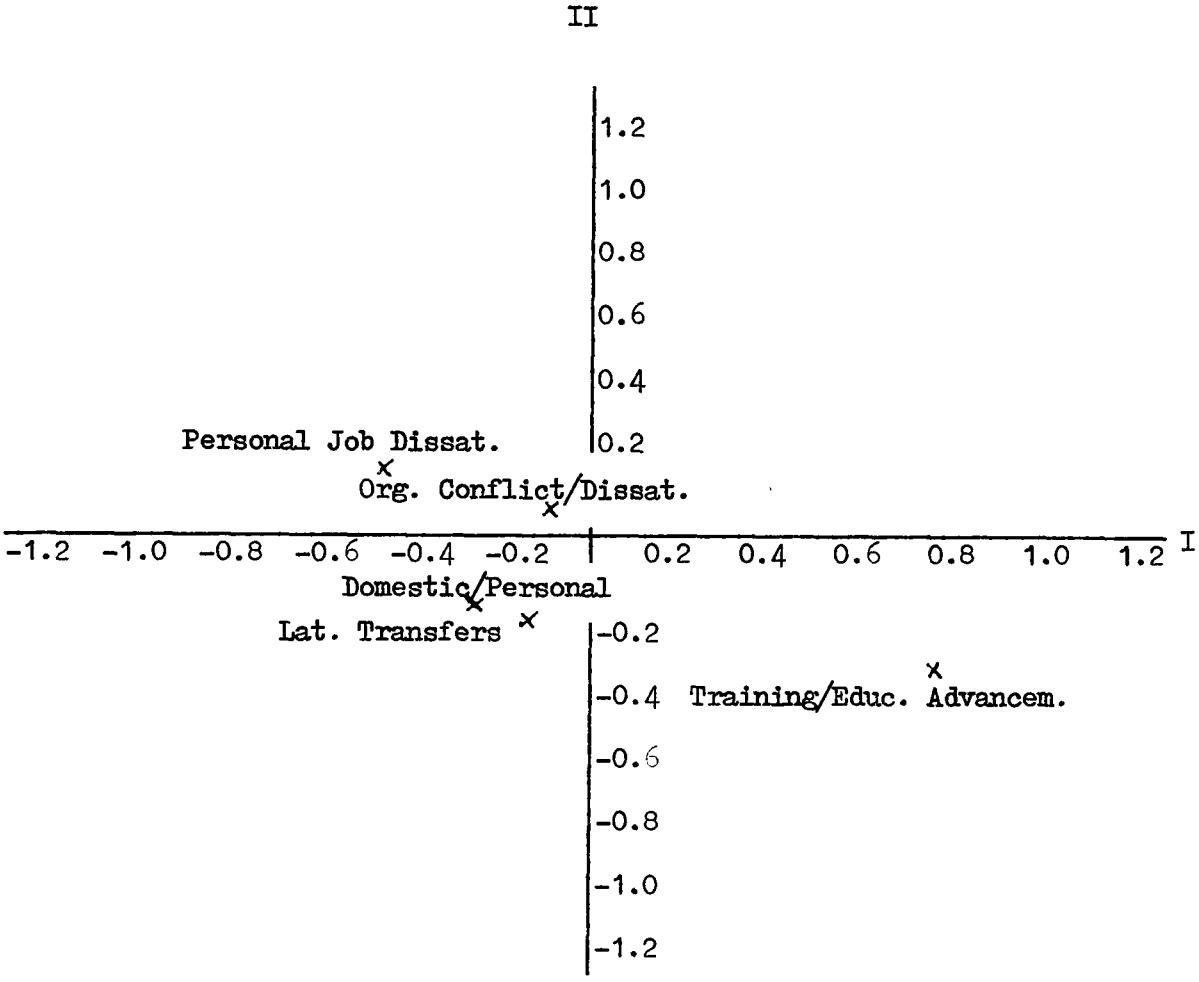
Table 95 Standardized Discriminant Function Coefficients for Reasons for Leaving the Second Job Using OPSCI and OBI Scales as Criteria

Variable	Standardized Discriminant Function Coefficients	
	I	II
Sociability-Aloofness	.11	.13
Dogmatism-Adaptability	-.38	-.06
Aggression-Accommodation	.02	.06
Stability-Instability	.12	-.47
Tension-Relaxation	-.17	.38
Dominance-Submissiveness	.23	-.31
Depression-Elation	.54	-.55
Existential	.26	-.10
Economic	-.33	.13
Affiliative	-.32	.25
Self-Fulfilling	.00	.05
Socially Esteemed	.25	-.33
Socially Obligated	.13	.00
Power	.07	.26
Political	-.02	-.39
Security	-.18	-.04
Achievement	.17	-.13
Altruistic	-.12	.43
Self-Identity	.06	-.29

Table 96 Group Means in the Discriminant Space

	Axis	
	I	II
Domestic/Personal	-.31	-.13
Organizational Conflict/Dissatisfaction	-.12	.07
Personal Job Dissatisfaction	-.53	.15
Lateral Transfers/Redundancies	-.20	-.16
Job Advancement	.56	1.11
Training/Education Advancement	.79	-.32

Figure 6 Centroids of the Six Categories for Leaving the Second Job on Discriminant Functions I and II



relaxation dimension. Individuals in the training/educational advancement group tended to have a more central altruistic work orientation, and a less central political work orientation.

The findings clearly indicate that the OPSCI and OBI scales produced statistically significant discriminant functions to differentiate between the different reasons individuals gave for leaving their first and second jobs. The four criteria of occupational behaviour used in this study have been demonstrated to have relationships with the OPSCI and OBI scales which do not refute the major propositions of the author's occupational belief system theory. The OPSCI and OBI scales accounted for most of the variance in the occupational choice measure of occupational behaviour, and the least variance in the vertical and horizontal career pattern measure of occupational behaviour. However, multiple discriminant analysis is very suspectible to sample-specific covariation, and the correlations tend to be artificially high because of the unique characteristics of the sample. In other words, these results which do not disconfirm the author's theoretical propositions, need to be cross-validated on another sample.

8.19 The final analysis which the author decided to undertake on this data was an examination of the relationship between Patchen's Job Motivation Index and the OPSCI and OBI scale variables. The interest in this relationship lies in the interaction of job motivation and occupational behaviour in that an expressed action towards a course of action is often a reliable indicator of behaviour. At least our level of job motivation may be interpreted as forming a predisposition to behave in a particular way at work. In other words, our job motivation functions as an orientation to work, and thus reflect an individual's beliefs about work which, the author argues, are both a function and a consequence of the occupational persona. An examination of the relationships, therefore, between the job motivation index and the OPSCI and OBI scales is very pertinent for the author's occupational belief systems theory in that job motivation might

Table 97 Regression Analysis of Job Motivation Index on OPSCI and OBI Scale Variables

	Beta	F	Simple r
Sociability-Aloofness	.08	2.31	.20
Dogmatism-Adaptability	-.08	2.25	-.04
Aggression-Accommodation	-.02	.19	-.03
Stability-Instability	.02	.09	.14
Tension-Relaxation	-.03	.38	-.18
Dominance-Submissiveness	.13	5.32*	.29
Depression-Elation	-.11	4.62*	-.25
Existential	.06	1.16	.10
Economic	-.05	.87	.00
Affiliative	-.08	2.14	.06
Self-Fulfilling	.02	.18	.26
Socially Esteemed	.02	.11	.18
Socially Obligated	.03	.36	.19
Power	.13	5.10*	.31
Political	.02	.19	.11
Security	-.02	.16	.06
Achievement	.08	1.78	.23
Altruistic	.11	3.91*	.22
Self-Identity	.13	5.02*	.24

* $p < .05$ df = 1 and 402

Multiple R = 0.47

R^2 = 0.23

be expected to be a function of certain occupational beliefs and occupational persona traits.

The relationship between the scales was analyzed by using a standard multiple regression analysis, and the author employed the SPSS REGRESSION program. The results of the standard multiple regression analysis are presented in Table 97. The findings show that $R^2 = 0.23$, indicating that 23% of the variation in the Job Motivation Index is explained by the OPSCI and OBI variables operating jointly.

Interpreting the beta weights as indices of which OPSCI and OBI variables are the best predictors of job motivation, there are 5 variables which are linked in a statistically significant manner ($p<.05$) with the job motivation index. It should be noted, however, that a relatively liberal criterion ($p<.05$) for the predictor variables was chosen because of the generally exploratory nature of this analysis. The dominance-submissiveness scale was most positively associated with job motivation, and the depression-elation scale had a significant negative relationship with the job motivation index. In other words, individuals who scored higher on the job motivation index tended to be more dominant and more elated, and the more submissive and more depressed individuals tended to have scored lower on the job motivation index. The 3 work orientations which are significantly related to the job motivation index are the power, self-identity and altruistic orientations to work.

The OPSCI and OBI variables explained 23% of the variance in the job motivation index, and the job motivation index has been shown to be a function of both occupational beliefs and occupational persona traits.

Summary

The first half of Part 3 has focused on a discussion of the design of the study, and a decription of the sample, the procedure, the research questionnaire, and methods of data collection. The second half of Part 3 discusses the results of the study. The psychometric analyses of the OPSCI and OBI are described, and the personal and situational correlates of the OPSCI are explored. The most important analyses involve the examinations of the relationship between occupational beliefs, the occupational persona, and occupational behaviour as measured by occupational choice, career patterns, and reasons for leaving jobs.

PART FOUR

DISCUSSION AND CONCLUSIONS

9. DISCUSSION

9.1 The objective of Part 4 is to review the results of this study, and in particular examine their implications for the author's occupational belief system model of occupational choice and occupational behaviour. However, there will also be a discussion on the usefulness of the OPSCI, and the benefits of adopting an interactionist approach to the study of the occupational persona, and how different occupational persona profiles differ in relation to their personal and situational correlates. There will also be an attempt to establish the usefulness of the OBI as a measure of work orientation. There will be an evaluation of the contribution of the author's occupational belief systems model to the understanding of the occupational choice process, and to occupational guidance and life counselling systems. The relevance of the work orientation concept to the study of work orientation, and as a conceptual framework for understanding organizational structure and organizational behaviour will also be examined. The final chapter of Part 4 will outline the main conclusions of the study and discuss the directions in which the research could be developed.

9.2 The first task of this discussion is to review the development of the author's Occupational Persona Self-Construct Inventory. In the view of the author, among others, an individual's overt personality at work is a role-specific manifestation. In other words, personal determinants and situational determinants at work combine to produce patterns of behaviour at work. The use of the term "occupational persona" is intended to imply that the study has concentrated on overt interpersonal response surface traits manifested at work to the exclusion of any source traits. The term "occupational persona" has been formally defined as the expression of that part of the individual that he thinks he reveals publicly at work.

Many personality theorists, while abstractly acknowledging the "interaction of person and situation", appear to assume internalised behavioural dispositions relatively independent of

stimulus conditions. However, it is clear that similar situations evoke different behaviours in different people, and indeed, different situations can evoke similar behaviours in one person. In other words, situations have a different 'meaning' for each person. People at work, the author argues, do not indiscriminately respond to work situational influences, but rather they evaluate and select different stimuli to which they wish to respond. Therefore, to a certain extent, people 'edit' their behaviour at work and very often present a controlled image of themselves. The ways in which individuals respond and interpret different stimuli are, of course, very much person-specific phenomena so that neither situational variables nor person variables are sufficient by themselves to explain behaviour. It is the relationship or interaction between person variables and situation variables that is important. It follows from this argument that different personality measures need to be developed for different instances of role-specific behaviour.

The author's attempt to develop an instrument to measure the occupational persona which takes simultaneous account of both personal and situational influences is believed to be the first development of its kind. The author has developed a self-report inventory and the merits of a self-report technique are argued in greater detail in section 5.1. However, it should be reasserted that the person-specifity, as well as the situational-specificity, of behaviour necessarily involves the use of a self-report technique. In other words, we cannot make 'interpretation free' contact with reality, and behaviour, therefore, must be related to the person who behaves. For example, people construe, interpret or give meaning to stimuli in their own unique way. The author's self-report design has been improved by the use of relatively specific stimulus referents, and basing questions on direct recall of specific occupational behavioural situations.

Theoretically, the occupational persona is built around the fundamental Rogerian concept of the 'self'. Rogers takes a

phenomenological position with regard to the personality in that he holds that the reality of an object, person or situation is purely a function of the way it is perceived by a particular individual. Therefore, an individual reacts according to his perception of the various phenomena around him rather than to reality as defined in objective terms. So it is in the attempt to understand an individual's particular frame of reference that the author's instrument has been termed the Occupational Persona Self-Construct Inventory.

It is because the individual's world of experience can only be genuinely known by the individual himself that the validity of the OPSCI relies only on construct validation and content validation. Details of the content validation of the OPSCI, and the problems associated with determining its construct validation are discussed in section 6.9. The process of establishing the construct validation of an instrument is determined by gathering information from several different sources. In the first instance, the methodsof construction of the OPSCI contribute to the instrument's construct validity and these methods are outlined in detail in Part 2. Of particular psychometric interest in the development of the OPSCI is the use of a hierarchical factor analytic model, and the use of Factored Homogeneous Item Dimensions (FHIDs) as the basic unit of the factor analyses. Seven successive factor analyses verified the existence and sharp structure of seven factors. The previous accounts in Part 2 of the item generation, the FHID approach and the attempts to eliminate response bias all contribute to the overall construct validity of the OPSCI instrument.

However, the psychometric analysis of the OPSCI discussed in section 8.1 has revealed two scales which produced rather positively skewed distributions with mean scores located towards the end point of the scales. Section 8.4 discusses the apparent limitations of the sociability-aloofness and stability-instability scales, and the need to replace an item on the dominance-

submissiveness scale. The response patterns of the sociability-aloofness and stability-instability scales were similar on both samples, thus removing the likelihood of a sample-specific phenomenon. It is possible that there was some social desirability responding, but there is no evidence of social desirability on the other 5 OPSCI scales. These 5 other OPSCI scales produced psychometrically acceptable results as revealed in Table 30 in section 8.1. However, the author does concede that while there are obvious attractions in having a short, quickly administered inventory, there are problems in having only a few items measuring each scale. For example the reliability of the instrument is more susceptible to distortion.

It is also acknowledged in section 6.7 that the data reported in this study do not actually test the hypothesis that the OPSCI is measuring role-specific behaviour. It is hoped that the OPSCI has content validation in this respect because it is designed to measure role-specific behaviour and the individual's self-perceived impact on and relations with others at work. However, as discussed in section 6.7, 6 OPSCI factor traits correspond closely to the psychological meaning of 6 primary source traits identified by Cattell, although it can not be assumed that any given individual will produce a similar profile on the OPSCI and 16 PF scales. Presumably, to demonstrate that the OPSCI is not measuring role-specific behaviour, the OPSCI and 16PF scales would need to be administered in parallel to a large sample with work experience.

It has been argued in section 8.4 that the construct validation of the OPSCI will be enhanced by the number of meaningful relationships which can be demonstrated with the OPSCI scales. Section 8.12 explores which other variables measured in this study are most strongly linked to "explaining" variation in the OPSCI scales. For example, significant amounts of variance in the sociability-aloofness scale were linked to the affiliative, self-fulfilling and altruistic work orientations. Relatively large amounts of variance in the dogmatism-adaptability scale were related to the security, existential, self-identity,

socially obligated and economic work orientations. The aggression-accommodation scale was associated with the power work orientation and negatively linked to the altruistic, affiliative, and self-fulfilling work orientations. This aggression-accommodation scale was also positively linked with the tension-relaxation scale, and negatively related to the stability-instability dimension. The stability-instability scale was also negatively linked to the depression-elation scale, and positively related to the self-fulfilling work orientation as well as age and the married state. The tension-relaxation scale was linked in the expected directions with the stability-instability, depression-elation, sociability-aloofness and dominance-submissiveness scales. Significant amounts of variance in the dominance-submissiveness scale were related to the power work orientation, and to a lesser extent, the self-fulfilling work orientation and the married state. Finally, much of the variance in the depression-elation scale was associated with unemployment, low educational and occupational level, and negatively linked to the power and self-fulfilling work orientations. The depression-elation scale was also linked to low scores on the Job Motivation Index, and a temporal work orientation score which indicates that the more depressed individuals tended to have beliefs about work which were fixated on the past.

These meaningful relationships which support the construct validation of the 7 OPSCI scales have been exhaustively listed because they tend to contribute to the weight which can be placed on any subsequent analyses. It should also be noted that the 7 OPSCI scales were orthogonally rotated so the OPSCI scale interrelationships were not to be expected as a result of the inventory construction strategy. However, these relationships between the OPSCI and OBI scales do not crossvalidate the findings in any absolute sense because these scales themselves are measuring hypothetical constructs, and their relationship with overt occupational behaviour has not yet been established. Nevertheless, as it is argued in section 7.11, the extent to which the research findings can be generalized has been increased

by the number of "meaningful" relationships, and by the data collection methods in compiling a relatively large sample which is heterogeneous in terms of occupational grouping and age. Furthermore, the study is essentially exploratory in nature and aims to examine the direction of relationships rather than explain them in terms of precise mathematical equations. In consequence, therefore, the author felt justified to proceed with further analyses involving the OPSCI scales. Even the 2 OPSCI scales - sociability-aloofness and stability-instability - which were psychometrically less acceptable than the other 5 scales continued to relate in sensible ways to the other OPSCI and OBI scales.

9.3 Section 8.12 discusses the personal, educational and work history correlates of the OPSCI. The aim of the following paragraphs is to highlight some of the more interesting relationships rather than recount in detail the results which are presented in section 8.12. However, in the first instance, the interrelationships between the demographic variables themselves have proved to be rather complex (see section 8.9), and thus force somewhat cautious interpretations of the relationships between the demographic variables and the OPSCI scales. In any event, it is of particular interest to note that about 23% of the variance in the dogmatism-adaptability scale was related to education; about 18% of the scale's variance was linked to occupational level; about 16% of the variance was associated with employment status and about 8% was related to age. High scorers on the dogmatism scale tended to have lower educational and occupational levels and they were more likely to be older and unemployed, and they tended to have work orientations which were basically fixated in the past. It is, of course, a matter of conjecture as to whether dogmatism is the cause or consequence of low educational and occupational levels and unemployment. In reality, dogmatism is probably partly a cause and partly a consequence but what is significant is that the research instrument has drawn attention to the importance of this variable in these areas. Not surprisingly, the most powerful work orientations for the dogmatic individuals or those individuals who presumably lack cognitive complexity,

are the security, existential, self-identity and socially obligated orientations to work. That is, it might be hypothesised that dogmatic individuals tend to be individuals who need work to help create a stable life pattern, to help make life meaningful, to help establish their identity, and who work out of a sense of social obligation or a sense of responsibility to the community.

A further issue for research might be the exploration of whether dogmatism merely reflects a lack of cognitive complexity, and thus a limited capacity to function at higher educational and occupational levels, or whether the link with unemployment may suggest that dogmatic individuals generate more interpersonal dissonance and that they have a lower success rate at employment interviews. The author has particular interest in the determinants of interpersonal dissonance at work and this study appears to have identified an interesting relationship worthy of further investigation.

Although the amounts of variance explained were much smaller, the sociability-aloofness scale was also linked to educational level and the dominance-submissiveness scale was also related to employment status. Individuals who scored higher on the sociability-aloofness dimension tended to have reached a lower educational level, and more unemployed individuals tended to have scored lower on the dominance-submissiveness dimension. Again it is interesting to speculate whether the occupational persona trait is the cause or effect of such associations. It seems probable that individuals with fewer educational qualifications will be more likely to work in groups and will place more emphasis on the social benefits of working rather than on the intrinsic value of the activity itself. Individuals with higher educational qualifications are presumably more likely to have their own room or office, and there will be less pressure to conform to be sociable. In other words, the environmental design or office layout design may be an important indirect determinant of the sociability trait, and perhaps also some other occupational persona traits.

9.4 The second major task of this discussion is to examine the empirical implications for the author's occupational belief system model of occupational choice and occupational behaviour. This theoretical conception strongly emphasizes the importance of the "psychological environment" or the world of experience as opposed to the world of physical reality. Although occupational psychology has not ignored the study of cognitive structures in the analysis of behaviour, occupational choice theory has developed largely independently of the theory of belief systems. The research evidence outlined in section 2 seems to suggest that specific cognitive styles may have an impact on occupational choice and occupational behaviour, and yet the cognitive processes people use have not been well understood. It does, however, seem that the belief concept clarifies some problems in the field of occupational choice and occupational behaviour, and it is argued here that both the occupational choice process and occupational behaviour should be understood as involving belief mechanisms.

The form which the relationship between beliefs and overt occupational behaviour actually takes depends upon one's basic theoretical position on the nature of beliefs. It seems obvious that the cognitive processes involved in occupational behaviour can only be understood in relation to the notion that individuals have beliefs about work; and the cognitive processes involved in such beliefs are likely to be similar to those involved in construing other complex social phenomena. However, all too often, the concept of 'work' has been viewed as uncomplicated, and there has been a tendency to ignore how workers view their work, and what kinds of meaning it has for them.

The research work of Harvey and Rokeach, which is reviewed in section 2, has given considerable support to the usefulness of the belief system approach. Although this approach has not been accepted uncritically, a major advantage of the approach is that the theoretical structure of the belief system is reciprocally related to the experiences and behaviour of the individual. In other words, the work situation may validate or invalidate the beliefs or neither confirm nor disconfirm them. In

accordance with reinforcement theory, the beliefs which are validated tend to be maintained, and less frequently maintained if they are invalidated.

The components of our individual occupational belief system dictate the way we perceive the different aspects of our occupational world, in that we all bring to situations an enduring system of beliefs which help us to interpret situations at work in a meaningful manner. For example, an individual's behaviour at work will vary in relation to the meaning work has for him. Therefore, this study perceives an indivdual's occupational persona and occupational behaviour as reflections of an individual's beliefs about work.

The concept 'belief' has been defined here as the cognitive process involving an individual's thoughts, feelings and ideas about his world of work, and the concept 'system' is conceived ofas a psychological system in which the parts are not necessarily logically interrelated. When reference is made to an occupational system of beliefs, all of a person's beliefs about work are included, as inferred from all that he says and does at work. These beliefs represent all that a person considers to be true or likely about his occupational world and all that a person considers false or unlikely about his occupational world. However, when reference is made to an 'occupational system of beliefs', it is not meant to imply that an individual's beliefs about work are based in an 'occupational belief compartment' of the mind. An individual's beliefs about work are merely an interrelated part of his total framework for understanding his world, and include every belief of any kind which an individual may have developed about his world.

The concepts used to describe the structure of the occupational system of beliefs are based on the work of Lewin, and later, Rokeach. The three theoretical structures are described as the belief-disbelief dimension, the central-peripheral dimension, and the time-perspective dimension. Occupational beliefs are

conceptualized as being organized in a pyramidal fashion with the individual's most important and most central beliefs at the top. However, the cognitive structure of an individual's occupational system of beliefs is construed as continually undergoing change as the individual interacts with his environment; and the precise beliefs at any given point in time are considered to be a function of the outcome of the individual's interaction with his environment.

The Occupational Beliefs Index (OBI) was developed as an instrument for measuring an individual's occupational system of beliefs. The development of the OBI is described in section 4 and it was essentially deductive from the theoretically based formulations of the occupational system of beliefs. The concept work orientation was also introduced as reflecting an individual's occupational belief system, or representing all that a person believes and disbelieves about his occupational world. The author regards the work orientation concept as particularly important in linking the theory of belief systems to occupational choice theory. The attractiveness to the author of the work orientation concept is that it reflects an individual's entire occupational belief system which is an organization of verbal and non-verbal, and implicit and explicit beliefs and includes all the motivations, attitudes, values, wants, needs and so on that an individual may have. Consequently, there is no need to make distinctions about the importance of such concepts in determining how an individual views his work situation.

9.5 It was, of course, essential that the OBI be demonstrated to have psychometric acceptability if weight was to be placed on any subsequent analyses involving the OBI. In general, the psychometric data as presented in section 8.5 were encouraging and provided support for the power of the instrument to discriminate between an individual's beliefs. The items were devoid of any tendency-to-agree response sets, and all the responses to the items approximated a normal distribution, except the responses to the economic item which were, as expected, positively skewed.

The factor analysis employed (see section 8.6) to examine the relationships between the 12 OBI items revealed a three factor structure. It was to be expected that all items would be positively correlated to some extent but there did seem to be a grouping of items which deal with psychological, social and philosophical gratifications from work; another grouping which the author interpreted as concerning itself with a striving for success and material gain; and a third grouping which seemed to emphasize the external locusof control over our work involvement. However, this three factor grouping was not a very sharp structure as some items loaded relatively highly on more than one factor. The usefulness of this three-way classification system of occupational beliefs or work orientations is not at present, clear. This classification certainly differs from Bennett's (1974, 1978) classification of three types of orientation which he described as economic or instrumental, social or relational, and personal growth.

The author was keen to explore two further issues in relation to occupational beliefs. Firstly, whether it could be established that different occupational beliefs were not hierarchical in character, and secondly, whether the OPSCI and OBI items were not measuring the same constructs. Section 8.7 presents the results of four Guttman Scale analyses which confirm that there is no hierarchical ordering of beliefs in that no individual belief is a prerequisite for the development of any other belief, or in other words, a positive response to a particular belief does not imply that a positive response has been made to any other particular belief. Another factor analysis was employed (see section 8.13) to determine whether the OPSCI items and OBI items were indeed statistically distinct as well as conceptually distinct. Only one OBI item loaded on a factor which also had high loadings from OPSCI items (ie the power work orientation item loaded highly on the same factor as the dominance-submissiveness scale items).

Section 8.14 describes how a better understanding of the

relationship between the OPSCI scales and OBI scales was achieved by performing a canonical correlation analysis. The findings suggest that about half the variance of the OPSCI variables can be "explained" by the OBI variables, and that three specific types of occupational persona can be predicted with confidence from a weighted linear combination of occupational beliefs. Three types emerged which the author interpreted as referring to a fulfilled leader or organizer type, an unambitious, sociable, instrumental type, and an unfulfilled, frustrated, alienated type. The findings also suggest that about a third of the variance of the OBI variables can be "explained" by the OPSCI variables; and because the distinction between the criteria and predictor variables in the canonical correlation is a very arbitrary process, the findings also indicate the specific OBI profiles which can be predicted from a weighted linear combination of the OPSCI variables.

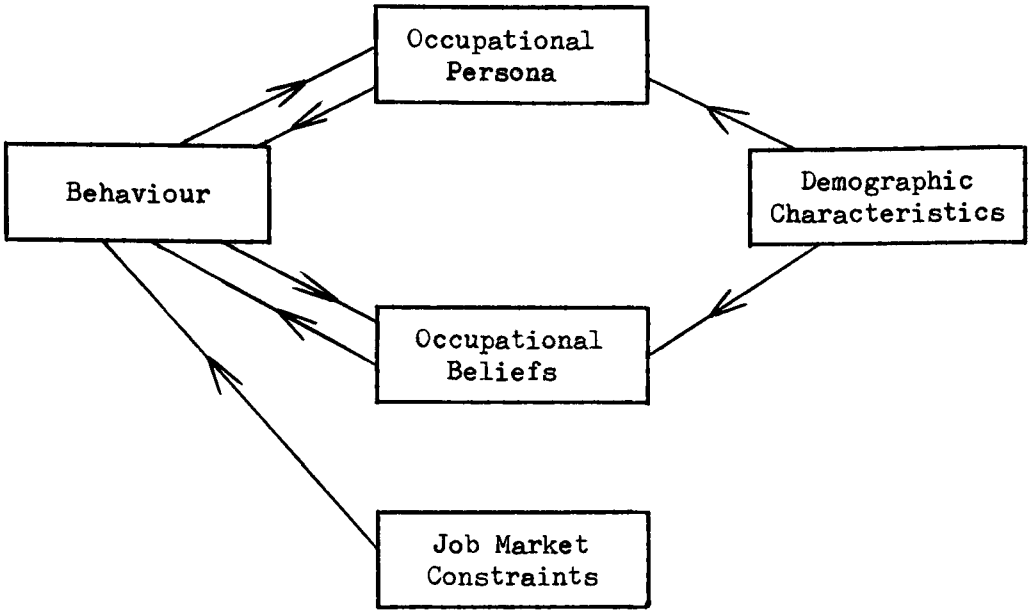
It is clear that the canonical correlation analysis tends to maximize sample-specific covariation, and so these weighted linear combinations could not be used for prediction purposes until they were crossvalidated on another sample. However, these 3 types perhaps approximate the personality types identified by Ginzberg (1951). The 'fulfilled' type may approximate Ginzberg's "work oriented type", and the 'unfulfilled' type may approximate Ginzberg's "pleasure oriented type". Ginzberg also distinguishes between "active" and "passive" types, and the author's "instrumental" type, may reflect the "passive" type who rather lets himself be 'shaped' by external forces.

An important methodological problem in the construction of the OBI was whether it was reasonable to impose a framework of beliefs on the respondents rather than allowing them to spontaneously volunteer the ways in which they were orientated to work. The author decided that the latter method was excessively time-consuming, would limit the size of the sample, and thus inhibit any generalized conclusions from the data. Secondly, the author considered the task rather too complex for many individuals

to accurately perform without the guidelines to structure their response. Another problem revolved around whether one item was adequate to measure each individual work orientation. Certainly the OPSCI and OBI scales (see section 8.14) have been demonstrated to relate to each other in sensible ways. Furthermore, the relationships between Tausky's Meaning of Work Scale, which measures 4 types of orientation to work, and the OBI (see section 8.8) provide evidence which contributes to the construct validation of the OBI.

9.6 The author's occupational belief systems theory leads to the prediction that an individual's behaviour at work and his choice of occupation are both a function of his beliefs about work in the context of other human activities, and his occupational persona. However, it is also predicted that an individual's precise beliefs about work at any given time is a function of his occupational choice and/or behaviour (ie the outcome of the individual's various predictions about his world). Finally, it is predicted that an individual's occupational persona traits will also be a function of the ever-changing work behaviour, and any particular beliefs about work at any given time. It is also recognized that the interrelationships between occupational behaviour, occupational beliefs and the occupational persona are further compromised by socio-economic constraints. The model presented overleaf is a useful representation of how all the variables interrelate. In terms of occupational choice, all possible occupations with a reasonable chance of attainment are considered to be the alternative behavioural actions. The individual then assesses or evaluates his or her beliefs about work in general which will be reciprocally influenced by his or her occupational persona, and then he attempts to match this profile with a work situation which best approximates his occupational beliefs or orientation to work.

A Schematic Representation of the Author's Occupational Belief Systems Model



In specific terms the author's model makes the following three predictions:

(a) That individuals who display different patterns of work behaviour will significantly differ in certain beliefs about work, and significantly differ in the profile of their occupational persona.

(b) That individuals who display different beliefs about work will significantly differ in their patterns of work behaviour, and significantly differ in the profile of their occupational persona.

(c) That individuals who display different occupational persona profiles will significantly differ in their patterns of work behaviour and significantly differ in certain beliefs about work.

However, before examining the significance of this study's findings in relation to this model, it is important to appreciate that in a very fundamental sense, quasi-experimental results can

never "confirm" or "prove" a theory but only provide a situation in which a successful theory escapes being disconfirmed. The word "prove" is inappropriately applied to inductive experimental procedures. The results of an experiment tend to probe or explore a theory but they never provide "proof". A successful theory is one that has adequately survived such explorations. Therefore, the "null hypothesis" can only be "rejected" and never "accepted" as such. This argument is compatible, for example, with the views of Hanson (1958) and Popper (1959), who emphasize the impossibility of deductive proof for inductive laws.

However, varying degrees of strength can be attributed to a theory depending on the number of plausible rival hypotheses available to account for the data. For example, "well established" theories have been thoroughly probed by complex experiments and few if any rival hypotheses may be practically available or seriously proposed. Where controls are lacking, of course, in a quasi-experiment the results must be interpreted by considering the likelihood of uncontrolled factors accounting for the results. The more numerous and independent the ways in which the experimental effect is demonstrated, the less numerous and less plausible any singular rival invalidating hypothesis becomes. The "validity" of the experiment then becomes one of the relative credibility of the ability of rival theories to explain the experimental effects.

In general, the data do not refute the 3-sided wheel model explanation of the interrelationship between the occupational persona, occupational beliefs and occupational behaviour, as measured by career patterns, occupational choice, and reasons for leaving jobs. The results presented in section 8.16 support the proposition that occupational behaviour, as defined by choice of occupation, is both a function of the occupational persona and occupational beliefs. For example, professional and managerial groups tended to be more dominant, less depressed, less sociable and less dogmatic, and less concerned with affiliative and security work orientations. Both skilled and

unskilled groups placed less emphasis on power, political and socially obligated work orientations. Unskilled workers tended to be less stable. Commercial and personal services workers appeared to be less stable and less aggressive, and also less concerned with economic, socially esteemed, socially obligated, power and self-fulfilling work orientations.

Section 8.17 presents the data which supports the proposition that occupational behaviour, as defined by classifying career patterns in terms of stable, unstable, multiple-trial and conventional career patterns, is both a function of the occupational persona and occupational beliefs. For example, the unstable career pattern is clearly differentiated from stable, multiple-trial and conventional career patterns in terms of both occupational persona traits and occupational beliefs. Individuals with unstable career patterns tended to score higher on the tension-relaxation scale, and lower on the dominance-submissiveness scale, and place more emphasis on affiliative work orientations and less emphasis on political, power, self-identity, socially esteemed, socially obligated and economic work orientations.

Another measure of occupational behaviour adopted was an analysis of career patterns by calculating the ratio of vertical moves to horizontal moves for each individual. Again the analysis described in section 8.18 demonstrates that occupational behaviour defined in this way is both a function of the occupational persona and occupational beliefs. Individuals with vertical career patterns tend to score higher on the dominance-submissiveness scale and the stability-instability scale and lower on the tension-relaxation scale. Vertical career patterns are also associated with a greater emphasis on socially esteemed, power, political and achievement work orientations. Horizontal career patterns tended to be linked with higher scores on the depression-elation, dogmatism-adaptability, and sociability-aloofness scales, and a greater emphasis on an affiliative work orientation.

An examination of the reasons individuals gave for leaving each job, was adopted as the fourth and final measure of occupational behaviour. Section 8.19 illustrates the further support for the proposition that occupational behaviour, defined in this way, is again both a function of the occupational persona and occupational beliefs. For example, individuals who left their first job because of organizational conflict/dissatisfaction tended to be more aggressive and more depressed, and placed less emphasis on existential, socially esteemed, socially obligated and altruistic orientations to work. Individuals who left their first job for domestic/personal reasons tended to be more sociable, more dogmatic, less aggressive, less dominant and place less emphasis on power orientations to work. Individuals who left their first job for job advancement tended to be more dominant, less dogmatic, less depressed and place more emphasis on self-fulfilling, power and political orientations to work, and less emphasis on security and altruistic orientations to work.

9.6 The data, therefore, does not refute the major proposition of the occupational belief system theory that occupational behaviour is both a function of the occupational persona and occupational beliefs. The author also believes that the theoretical model acquires more strength because the relationships can be demonstrated with four different measures of occupational behaviour. The OPSCI and OBI scales accounted for most variance in the occupational choice measure of occupational behaviour, and least variance in the vertical and horizontal career pattern measure of occupational behaviour. It should also be noted that in a multiple discriminant analysis the choice between criteria and predictor variables tends to be a very arbitrary process. In other words, any of the three sets of variables can be designated as the criteria or predictor variables. Consequently the findings of these multiple discriminant analyses also indicate that occupational beliefs can also be predicted from a weighted linear combination of occupational persona traits and occupational behaviour measures; and that an occupational persona profile can also be predicted from a weighted linear combination of occupational beliefs and occupational behaviour measures.

However, in interpreting these results which apparently support the author's theoretical propositions, the author has already acknowledged that multiple discriminant analyses do tend to maximize sample-specific covariation and thus generate artificially high relationships which are due to the unique characteristics of a particular sample. Accordingly, these equations would need to be crossvalidated on another sample before they could be used for prediction purposes.

The author's occupational belief system model has also acknowledged the importance of socio-economic constraints in shaping occupational behaviour and occupational choice. Section 8.10 describes the findings in relation to the associations between some selected demographic characteristics and occupational choice and occupational behaviour, as measured by career patterns. Not surprisingly, relatively large amounts of variance in occupational choice were explained by educational level, and father's occupation. Sex and age also tended to differentiate commercial and unskilled workers from other groups, but this may only be due to sample-specific phenomena. Demographic variables explained even more variance in occupational behaviour as measured by career patterns. For example, individuals with an unstable career pattern tended to be younger, single with a lower level of occupation, and a slightly greater tendency to be female.

In this sample, therefore, the demographic variables were found to explain more of the variance in the occupational choice and occupational behaviour measures than both the OPSCI and OBI scales, but still the author's model escapes being disconfirmed by the data. Yet, as was previously stated, the degree of strength which can be attributed to the model depends on the number of plausible rival hypotheses available to account for the data. The introduction of an occupational beliefs concept compensates for the weakenss in Super's 'self-concept argument' which is that it does not appear necessary within Super's theoretical formulation to relate occupational choice to a self-concept, which is tempered by a realistic awareness of what

occupations are really like. For example, a fundamental assumption of the OBI theory is that all men do not desire to work, and the occupational beliefs represent the extent to which the individual is work orientated.

Both Holland and Dawis and Lofquist have focused on the interaction between work personality and work environment. Essentially both theories are narrow-band theories. Holland's theory appears to assume that all men desire to work, and the argument that people search for environments that will let them exercise their skills and abilities, express their attitudes and values, and take on agreeable problems and roles, seems unnecessary when people may deliberately choose to fulfill themselves primarily through non-work activities. Holland's theory also seems to argue that people consciously and rationally choose occupations that fit their self-profile whereas the concept of occupational beliefs has been introduced to explain the unconscious determinants of the occupational choice process. These criticisms also apply to the Dawis and Lofquist narrow-band theory because they also appear to align themselves with Super's 'self-concept argument', and they argue that an individual seeks work situations which will correspond with his needs and abilities.

The expectancy and decision theory approach, and in particular Fishbein's expectancy-value model, has provided one of the most promising approaches to understanding the relationship between beliefs and behaviour. Furthermore, Fishbein presents his theory in a testable form. Fishbein's theory, of course, does not explicitly consider personality, situational or demographic variables, but rather it is argued that all other variables manifest themselves through the 2 variables outlined in the theory (ie attitudes and subjective norms). Fishbein also claims that no other variables have been identified which can help to explain more of the variance in the choice process than attitudes and subjective norms alone.

The OBS theory has some roots in expectancy theory, but the data

confirms that some variance can be explained by the occupational persona, and that beliefs, behaviour and the persona can all be a function of each other. The author is also not convinced that Fishbein's two variables are conceptually distinct. That is it seems to the author, that a person's attitude to something is not independent of what he thinks other people important to him think of that something. Fishbein's theory also needs to obtain levels of specificity that reduce the theory's relevance in helping to understand a longitudinal occupational choice process and career development. Another difference between the author's model and Fishbein's model is that Fishbein's model implies that decisions are based solely on a rational and conscious analysis of costs and benefits. The occupational beliefs framework can subsume social, political and cultural pressures and socio-economic factors as mediating variables in determining an individual's occupation.

Indeed, the occupational belief system model is applicable to both men and women, and individuals of all ages. Essentially, each individual has an occupational belief system which determines how he perceives his occupational world. Each belief system reflects all an individual's experiences, and thoughts and ideas about his occupational world. The model, therefore, is designed to accommodate individual differences, and it is not challenged by the findings in this study that men and women tend to differ in terms of their occupational beliefs, and occupational persona traits, and occupational behaviour as measured by career pattern, occupational choice and reasons for leaving jobs.

9.7 It is also argued here that the analysis of an individual's occupational beliefs, and his work orientation which is a function of these beliefs, is a valuable conceptual framework for use in the occupational guidance and counselling process. The increasing emphasis placed upon occupational development, as contrasted to single occupational choices, has been paralleled by a conception of occupational counselling as a continuing process. Life-span counselling is now widely advocated. In other words, choosing

a job is often equivalent to choosing a way of life. One spends a large part of one's life working but its influence extends well beyond working hours. It is argued here that occupational psychology has traditionally been guilty of a parochial, academic approach of studying work behaviour in an existential vacuum. For example, there has been a tendency to study people at their place of work only, without examining the numerous personal and social variables influencing the individual outwith the work situation.

The occupational psychologist's contribution to this problem must be to encourage a shift in perspective from analysing individuals-within-organizations to analysing individuals-within-society. The psychologist must emphasize the wider psychological framework of occupational choice and adjustment at the expense of de-emphasising the narrower economic framework of occupational adjustment, which is oriented towards concentrating on ergonomics, wages, promotion, leadership, hours and conditions of work and so on.

The argument proposed here is that to understand a person's occupational choice and/or occupational behaviour, it is necessary to understand how he is orientated to work. The author has identified a number of different ways in which individuals can be orientated to their work and he has developed the OBI to function as a career counselling tool for classifying different orientations to work. However, classification systems for use in occupational guidance are not new. The traditional trait-matching approach fundamentally assumes that individuals differ in abilities, interests and personalities, and that jobs differ in requirements and that both profiles must be reasonably congruent. For example, Rodgers' (1952) Seven-Point Plan assesses individuals under the following headings: physical make-up, attainments, general intelligence, special aptitudes, interests, disposition and circumstances; and McKenzie (1954) has attempted to classify occupational requirements under similar headings.

The usefulness of a Work-Orientation classification system is reflected in the evolution of occupational guidance and counselling to career guidance and counselling and life-span guidance and counselling. If career development is concerned with the development of the total individual, the counsellor must understand the relationship between man and his work. In a society in which work roles seem destined to play less important roles in the lives of many individuals, it will be increasingly important for counsellors to determine what a person gets out of work and what alternate non-occupational roles exist through which he may find self-fulfilment. Self-fulfilment takes place in both occupational and non-occupational activities and different roles can be played in various combinations.

Career decisions and plans are therefore life decisions and plans. The career counsellor must assist individuals to become aware of their work roles, and the consequence of their work on their other human activities. Career counsellors must also help individuals become aware of non-work roles and the gratifications and self-fulfilment to be achieved by various combinations of work and non-work roles. In this context, it is important that counsellors help individuals 'identify' environmental and personal barriers to life fulfilment and examine and rehearse alternative ways of coping with these barriers.

The basic career guidance problems revolve around the determination of the place of work in the context of an individual's other human activities. The gratifications and functions which are achieved by the work role must be interpreted in the context of the overall desired life pattern. The choice, therefore, is between alternative life styles, and not alternative occupations. It is this choice of life style which will determine how a man is orientated to his work, and determine how he behaves at work.

The next career guidance problem area is determining what an individual is prepared to do to achieve his desired life-style. The counsellor must help the individual understand the influence

of work as a determinant of life style, and help the individual determine how much of his identity he wishes to be defined in occupational terms. The counsellor must familiarize the individial with the range of satisfactions to be had from employed work and make him differentially aware of the psychological and social facts of occupational life as opposed to the economic aspects; (that is,variables relating to people, type of organization and life-style implications as opposed to entry and training requirements, job description and physical surroundings). When some awareness of the alternative life styles has been reached, the counsellor can then help the individual to develop life goals and action plans.

9.8 The final section of this chapter will discuss the relevance of the work orientation concept in both the study of work motivation and as a conceptual framework for understanding organizational structure and organizational behaviour. Traditionally, work motivation theories have often been based on hypothetical constructs such as "needs" which may often lack relevance in explaining motivational behaviour. For example, an individual will not necessarily seek satisfaction of his needs if his expectance of these needs being satisfied in the work situation is low. The concept of work orientation avoids the problems of differentiating between 'felt needs' and needs that an individual expects to be satisfied in a work situation. The work orientation concept involves the combination of several needs and has a strong empirical relationship with work motivation.

Many theorists have been concerned with developing classification systems to explain work motivation. Almost all theories of motivation make some assumptions about individual needs or drives, and they have been categorized and titled in a variety of ways, eg satisfaction theories, incentive theories and intrinsic theories. All these approaches have had enormous relevance for understanding organizational structure and organizational behaviour. All these approaches make certain assumptions about man and the kind of theory to which an organization subscribes

will influence all their views about management and people in their organization. Satisfaction and incentive theories assume that man is a passive creature to be manipulated, motivated and controlled by the organization. This assumption will lead the organization to develop a bargaining approach, preoccupation with extrinsic conditions of work, money and fringe benefits. Intrinsic theories believe in a self-actualizing man, and thus an organization will be concerned with creating opportunities for the individual to develop and realize his talents by providing 'suitable' kinds of work.

The introduction of the work orientation concept offers an alternative conceptual approach for understanding work motivation and organizational behaviour. The work orientation approach makes an assumption about man which is parallel to what Schein (1965) calls "complex man". Man has many motives which change over time and from situation to situation. It is also argued that man does not necessarily seek to satisfy his needs in any one work situation. The author has argued in the development of his OBI that man can perceive work as having 12 different functions. These functions need not necessarily be thought of as exclusive but they do embrace the distinctions made by other authors and they are perhaps few enough to facilitate meaningful analysis.

The Occupational Belief System model also has the advantage of introducing into the equation other factors which are likely to influence an individual's work motivation or orientation to work. For example, the occupational persona is the product of genetic, environmental, educational and experiential factors. The mechanism which determines our behaviour is the belief system. Each individual has a different belief system and for each individual the beliefs will vary in the extent to which they are central or peripheral to his life. The decision to act on these beliefs can range from the unconscious all the way to the totally conscious or deliberate. The time-span covered by these decisions can vary from the immediate to several years. The outcome of each decision will then operate to validate or invalidate each of the

individual's beliefs.

The Occupational Belief System model has relevance for organizational principles like 'management by objectives' and participative management. For example, if an individual is given the opportunity to contribute in deciding how to achieve the desired results he will tend to choose ways which will validate his beliefs. If the organization does not understand an individual's relationship with his work, the misunderstanding will be a potential source of conflict and trouble. For example, organizations should not assume that all individuals are orientated to their work in the same way, and that they are all trying to satisfy self-fulfilling, economic, power needs or whatever.

Traditionally, organizations have tended to enter into a fairly straightforward economic relationship with their employees. That is, there was an explicit exchange of goods or money for services rendered. More recently there has been a trend on the part of many managements to try to get the individual to identify with the goals of the organization and to become creative in the pursuit of those goals by contributing ideas to the means of achieving these goals. The problem, of course, that applies to this approach is that organizational goals may not appear meaningful to individuals lower down the hierarchy, and that some individuals do not want the responsibility of contributing to these decisions.

It does appear that stereotyped assumptions about the nature of man in general has led to a series of oversimplified approaches to the management of organizations. It is argued here that there is no 'right' theory of work motivation, but only individuals and their unique orientations to work. The work orientation concept is a useful way for the manager to try and understand why individuals work, and in turn this will be a useful guide in the choice of leadership style and the organization of work. However, it cannot be assumed that any particular organizational design will be desired by everyone, and an unexpected design may

invalidate an individual's beliefs and create a "cognitive dissonance", a psychological stress reflecting the discrepancy between what is and what you would like to be.

The work orientation conceptual framework can also be applied to the organisation's selection procedures for new members, or for the promotion and transfer of existing members. For example, the OBI could be used to determine an individual's work orientation, and the organization can then decide whether a particular job will allow the individual to maintain this particular orientation to work. This, of course, would not be a precise matching process nor indeed, would one want it to be as work orientations may change over time. However, it seems to the author, that more effective decisions can be made by feeding back to the job applicant the "expected work orientation profile" the job appears to require, and screening out applicants with work orientations not congruent to the "expected work orientations profile".

Of course, organizational design changes will always occur but these are usually made without reference to the outcomes of such changes for each individual. However, the organization will operate more efficiently if the organization retains a dynamic structure which allows different jobs to be structured in a way that matches each individual's work orientation profile. Some people like to work mainly for pay incentives, others like to work and talk to people, others like organizing, others like helping colleagues and so on. A consequence of this philosophy is that different jobs may be done the same way and the same jobs may be done different ways depending on the work orientation profiles of the individuals involved.

Bennett (1978) suggests that there are 12 major variables which have an important influence on behaviour in organizations. These are the variables which an organization can modify to change the "expected work orientation profile" the job appears to require. The variables are the working conditions,

organizational climate, organizational size, organisational objectives, managerial styles, the nature of incentives and rewards, the structure of roles, authority and decision-making, the availability of resources and technology, the nature of the tasks to be done, employee relations in work groups, and how the organisation operates within the external environment. These variables, of course, do not influence behaviour to the same extent but they act as constraints by validating or invalidating certain beliefs about occupational behavioural outcomes.

The thesis presented here is that the work orientation concept should be regarded as a major causal variable in the analysis of behaviour in organizations, and that the work orientation is influenced by both internal and external variables. Another useful framework for understanding organizational behaviour is the socio-technical approach which was developed by Trist at the Tavistock Institute in the early 1950s (Emery 1978). The socio-technical system is a management philosophy which encourages the optimal use of social and technical resources. It is based on the view that optimum production cannot be achieved by considering technical systems alone but that there is a crucial interrelationship between social systems and technical systems with both systems reciprocally influencing each other. One reservation about the socio-technical conceptual framework is that perhaps technical systems are not absolute determinants of behaviour, but rather they act as constraints on certain behaviour. Nevertheless,it remains a useful framework for analysing organizational behaviour, and it is one management philosophy which should be sympathetic to the use of the work orientation concept.

10. CONCLUSIONS

10.1 This final section will devote itself to outlining the main conclusions of the study and discussing the importance of this work as well as indicating directions in which the research could be developed. In order to conclude this study a summary of the main points of each chapter will be recapitulated prior to the

outline of the main conclusions.

10.2 The introductory section in Part 1 outlined some of the background ideas that led to the development of this study. Some ideas were discussed that led to the development of a hypothesis that the personal systems of evaluations that individuals place on work are related to an individual's occupational persona and occupational behaviour. It was made clear that this conceptual framework for understanding occupational behaviour had a potential contribution for understanding the occupational guidance process, and by interpreting occupational behaviour as occupational choice the research was firmly related to occupational choice theory. Also, the emphasis on measuring the occupational persona was evidently going to relate the research to personality theory. The interest in occupational belief systems, and the emphasis on this cognitive approach to understanding occupational behaviour, led the research into the field of social psychology and the study of belief systems. The term 'work orientation' was introduced which led to an association with the literature on orientations to work. Finally, the emphasis on an individual's work orientation was seen to have relevance as a conceptual tool for understanding work motivation and analysing organizational behaviour.

10.3 The main purpose of the study was to inductively explore the relationship between the occupational persona, occupational beliefs and occupational behaviour, and hopefully, provide support for the author's occupational belief systems model of occupational choice and occupational behaviour. Another objective was to develop an instrument to measure the occupational persona, and descriptively examine the personal, educational and work history correlates of the occupational persona, Finally, the study aimed to develop an instrument for measuring an individual's beliefs about work.

10.4 The major purpose of the rest of Part 1 was to review the literature and provide a rationale for examining the appropriateness of the author's theoretical developments. Section 2 reviews some

major approaches to the study of belief systems and traces the theoretical developments of the author's occupational system of beliefs. In particular, the structure of the belief system models proposed by Harvey and by Rokeach are examined in some detail. The concepts employed in describing the structure of the author's occupational system of beliefs are based on the work of Lewin, and later, Rokeach. The author's model is described as having three structures. The first structure contains all the beliefs (and disbeliefs); conscious and unconscious, that an individual accepts as true of his occupational world. The second structure is proposed as the central-peripheral dimension. The third structure is conceived as a time-perspective dimension.

10.5 Section 3 presents an overview of the main approaches to occupational choice theory and a summary of research findings related to occupational choice theory. In particular, the relationship of the author's occupational belief system model of occupational choice to the work of Super, Holland, Dawis and Lofquist and Fishbein's expectancy theory were discussed. These four areas of work were considered by the author to be the most closely related to the present theoretical development. The author's model was considered to have most roots in expectancy theory but the model also incorporates data on the occupational personality type as an important explanatory variable, and beliefs are interpreted in a macro level context, as reflecting the individual's orientation to work in the context of other human activities. Finally, the main propositions of the author's occupational belief system model of occupational choice are presented.

10.6 The final section of Part 1 reviews the research relating to the study of orientations to work, and outlines the development of the Occupational Beliefs Index. There has been very limited research and theoretical development in this field but Bennett has involved himself more than most researchers in this area and his work is examined in some detail. The author outlines the arguments and evidence for identifying 12 different types of orientation to work. There then follows a brief review of the

literature to examine previous attempts to measure both belief systems and orientations to work. Finally, the procedure used in constructing the Occupational Beliefs Index is described in detail. The method used was essentially deductive from the theoretically based formulations of the author's occupational belief system model of occupational choice and occupational behaviour. An important methodological problem in the construction of the OBI revolved around whether the findings would be distorted by imposing a framework of beliefs on the respondents, and whether one item was adequate to measure each individual work orientation. However, the author considered that any alternative method which would allow respondents to spontaneously volunteer the different ways in which they were oriented to work would be excessively time-consuming, would be difficult to administer, would limit the size of the sample, and thus tend to inhibit generalizations from the findings.

10.7 Part 2 is primarily devoted to a description of the Occupational Persona Self-Construct Inventory. The author's attempt to develop an instrument to measure the occupational persona, which takes simultaneous account of both personal and situational influences, is believed to be the first development of its kind. Part 2 begins with a brief consideration of the appropriateness of self-report techniques, and a brief review of the self theory underlying the occupational persona as well as a review of the research related to the development of instruments for measuring personality traits at work.

The first draft of the OPSCI consisted of 309 items and it was administered to 404 volunteer subjects from a cross-section of the working population from unskilled to professional workers. A hierarchical model was introduced to analyze the data, which involved the computation of seven factor analyses. An interesting feature of these analyses was the use of the Factored Homogeneous Item Dimension (FHID) as the basic unit of these analyses. From these analyses, 7 sharp factors emerged and each factor was represented by 5 items leaving in total

only 35 items in the revised version of the OPSCI. The factors were described as sociability-aloofness, dogmatism-adaptability, aggression-accommodation, stability-instability, tension-relaxation, dominance-submissiveness and depression-elation. In section 6.9, the problems associated with establishing the content and construct validation of the OPSCI are discussed.

10.8 Part 3 presents the methodology and the design of the main study. The design of this study was essentially exploratory, and a phenomenological research model was employed in the study. In other words, the occupational choice and occupational behaviour phenomena were described theoretically by the author's occupational belief system model before an attempt was made to collect data about the identified elements, and understand the relationships involved. Section 7 describes the development of the questionnaire to be used in the main study. The questionnaire incorporated a personal data form designed to extract certain personal, educational and work history information, the Occupational Persona Self-Construct Inventory, the Occupational Beliefs Index, four occupational behaviour measures, Tausky's (1968) Meaning of Work Scale, and a single item from Patchen's (1965) job motivation index. The questionnaire was completed by 422 volunteer subjects from a cross-section of the working population from unskilled to professional workers. Section 7.9 describes in detail how the sample was made up. The author hoped that the internal validity of the findings had not been threatened by any differential selection of respondents, and it was argued that the external validity of the findings, or the degree to which the results can be generalized, was increased by compiling a sample which is heterogeneous in terms of occupational grouping and age.

The quality of the data was examined in sections 7.12 and 7.13. There was little evidence of any response sets to the questionnaire, and only 4 questionnaires were excluded from the analysis because an entire section or major portion of the questionnaire had not been completed. The main study sample characteristics are outlined in section 7.14. The representativeness of the sample

would have been increased by a greater number of skilled workers, and a larger professional group would have given more meaning to cross comparisons between occupational groups, and a more equal balance of females to males would have been more preferable. However, any imbalances in the representativeness of the sample were not viewed by the author to be sufficiently large to distort the findings in anyway.

In addition to occupational choice, three other measures of occupational behaviour were adopted by the author. The author's task of classifying career patterns in terms of stable, unstable, multiple-trial and conventional profiles was a relatively straightforward process. The author's task of classifying career patterns in terms of horizontal and vertical movement was rather more complex. For example, on several occasions the author had to make rather arbitrary subjective judgements on whether a vertical move had in effect been made. The author's task of classifying the reasons given for leaving jobs involved coding the responses into what the author considered to be 26 conceptually distinct categories. These 26 categories were then grouped into 6 types of reason for leaving a job. This again was a rather arbitrary and subjective process.

10.9 The objective of section 8 was to review the results, and in particular, examine the empirical implications for the author's occupational belief system model of occupational choice and occupational behaviour. Firstly, however, the author undertook a further psychometric analysis of the OPSCI on the main study sample. The sociability-aloofness and stability-instability dimensions produced rather positively skewed distributions, and an item on the dominance-submissiveness scale did not load highly on the factor with the main study sample. Although there may have been some social desirability responding on these 2 scales, there was no evidence of social desirability responding on the other 5 OPSCI scales. These other 5 OPSCI scales produced psychometrically acceptable results as revealed in section 8.1. The author also acknowledges that while the brevity of the OPSCI

instrument has obvious attractions, the reliability of the instrument is more susceptible to distortion.

It was argued in section 6 that the OPSCI scales rely on content and construct validation, and that the construct validation of the scales will be enhanced by the number of meaningful relationships which can be demonstrated with the OPSCI scales. Although, in section 8.9, many such relationships are demonstrated, they do not crossvalidate the findings in any absolute sense because many of the other variables are themselves measuring hypothetical constructs, and their relationship with overt occupational behaviour has not yet been established. However, even the 2 OPSCI scales - sociability-aloofness and stability-instability - which were psychometrically less acceptable than the other 5 scales continued to relate in sensible ways to the other variables, and so, the author felt justified to proceed with further analyses involving the OPSCI scales. The personal, educational and work history correlates of the OPSCI scales were discussed in section 8.9. Some of the more interesting OPSCI correlations were the amount of variance in the dogmatism-adaptability scale that was accounted for by unemployment, low educational level, and low occupational group, and the amount of variance in the sociability-aloofness scale which was "explained" by low educational level.

10.10 The psychometric acceptability of the Occupational Beliefs Index was examined in section 8.5. This was obviously an essential exercise if weight was to be placed on any subsequent analysis involving the OBI. The psychometric data was encouraging and provided support for the power of the instrument to differentiate between an individual's beliefs. A factor analysis was used to examine the relationships between the 12 OBI items, and a 3 factor structure was revealed, but this 3 factor grouping was not a very sharp structure as some items loaded relatively highly on more than one factor. The results of this factor analysis are presented in section 8.6 but the author made no attempt to examine the usefulness of this three-way classification of occupational beliefs. The author also demonstrated in section 8.7

that different occupational beliefs were not hierarchical in character by computing four Guttman Scale analyses. The examination of the relationships between Tausky's Meaning of Work Scale and the OBI scales, described in section 8.8, provide further support for the constructs inherent in the OBI.

Another factor analysis was adopted to examine whether the OPSCI items and the OBI items were statistically, as well as conceptually, distinct and that they were not in effect measuring the same constructs. Only the power work orientation item loaded highly on a factor which also had loadings from OPSCI items, and thus provided strong support for the author's conceptual distinctions between the OPSCI and the OBI. A canonical correlation analysis was also employed to attempt a better understanding of the relationship between the OPSCI scales and OBI scales. The results do suggest that three specific types of occupational persona can be predicted from a weighted linear combination of occupational beliefs. The results are presented in section 8.14, and it is discussed in section 9 that these 3 types perhaps approximate the personality types identified by Ginzberg (1951). The author interpreted the three types as referring to a fulfilled leader or organizer type, an unambitious, sociable, instrumental type, and an unfulfilled, frustrated, alienated type.

10.11 A series of multivariate discriminant analyses were used to explore the relationships between occupational behaviour, the occupational persona and occupational beliefs. The author's occupational belief system model of occupational choice and occupational behaviour offers a three-sided wheel schematic model to explain the interrelationships between occupational behaviour, the occupational persona and occupational beliefs. Where occupational behaviour is defined as choice of occupation, career pattern or reason for leaving job, the data described in sections 8.16 to 8.19 do not refute the central propositions of the theory which are that (a) occupational behaviour is both a function of occupational beliefs and the occupational persona; (b) that occupational beliefs are both a function of the

occupational persona and occupational behaviour; and (c) that the occupational persona is both a function of occupational beliefs and occupational behaviour. The OPSCI and OBI scales accounted for most of the variance in the occupational choice measure of occupational behaviour, and the least variance in the vertical and horizontal career pattern measure of occupational behaviour.

In order to weight the relative importance of demographic variables in the context of the author's theoretical formulations to explain occupational choice and occupational behaviour, the relationship between demographic variables and occupational behaviour was also inspected by a series of multiple discriminant analyses. The demographic variables explained more of the occupational behaviour variance, as defined by choice of occupation and career pattern, than both the OPSCI and OBI scales. This finding in relation to occupational choice was not surprising but it was more interesting in relation to career pattern. These results are presented in section 8.9. Although, in general, these results do not seem to refute the author's theoretical propositions, the author emphasizes the need for a cautious interpretation of the findings of a multiple discriminant analysis. The multiple discriminant analysis tends to maximize sample-specific covariation and thus tends to produce artificially high relationships which may only reflect the unique characteristics of a particular sample. It is necessary, therefore, that the findings of the present study be cross-validated on another sample before the equations inherent in the occupational belief system model be used for prediction purposes. However, it can also be argued that the strength of the occupational belief system theory also depends on the number of rival theories which can account for the data. In the 'Discussion' in section 9, the author thus makes comparisons between his model and the theoretical formulations of Super, Holland, Dawis and Lofquist and Fishbein.

10.12 It is also argued by the author in section 9 that an individual's beliefs about work determine his work orientation, and that an

individual's work orientation is a valuable conceptual framework for understanding, the occupational guidance process. For example, the occupational psychologist must be prepared to encourage a shift in perspective from analyzing individuals-within-organizations to individuals-within-society. In other words, the idea of work must not be taken for granted but we must seek to explore the relationship between man and the idea of working. The Occupational Beliefs Index is recommended as a counselling tool to help classify and express an individual's work orientation.

10.13 The relevance of the work orientation concept to work motivation theory is also discussed. It is argued that the introduction of the work orientation concept offers an alternative conceptual approach for understanding work motivation, and consequently, organizational behaviour. An organization's view of how man is motivated to work has enormous implications on the organization's views about management and people in their organization.

It is argued that stereotyped assumptions about the nature of man in general has led to a series of oversimplified approaches to the management of organizations. The author proposes that there is no 'right' theory of work motivation, but only individuals and their unique orientations to work. It also follows that the work orientation concept should be regarded as a major causal variable in the analysis of behaviour in organizations. It is argued that the work orientation concept is influenced by both internal and external variables, and that an organization's personnel selection and job design should optimally aim to match an individual's work orientation profile with the "expected work orientation profile" the job appears to require.

10.14 The aim of this final section is to examine what implications the main conclusions have for any future research work. Very clearly, the usefulness of the theoretical development of the occupational belief system model will only be more accurately determined after further empirical research work and

crossvalidation studies. The author believes that this model has the potential to contribute very clearly to the development of a science of the psychology of occupational behaviour. The theory has its roots very firmly in basic psychology and it aims to aid our understanding of occupational behaviour, occupational choice behaviour, the occupational guidance process, the process of career development, and work motivation.

For a theory to become established several complex experiments need to be developed to explore the adequacy of the theory. The more numerous and independent the ways in which the experimental effect is demonstrated, the less numerous and less plausible any singular rival invalidating hypothesis becomes. Therefore, much meaningful research remains to be done to strengthen the support for the theory, and some proposals for specific research investigations are outlined below:-

(a) To demonstrate that different measures of occupational behaviour (eg salary, job satisfaction, behaviour rating scales) continue to be a function of occupational beliefs.

(b) To examine whether occupational beliefs have an effect on specific job choice rather than just occupational group.

(c) To explore whether occupational beliefs are influenced by other socio-economic variables (eg size and nature of residential community).

(d) To empirically demonstrate that occupational beliefs are dynamic in nature, and that these changes can be related as both a function and a consequence of occupational behaviour.

(e) To investigate how occupational beliefs are influenced by the general nature of the work situation, such as individual perspectives on managerial styles, the kind of organizational incentives and rewards, organizational size and goals, staff relations, the nature of the tasks and so on.

(f) To demonstrate that the occupational persona is responsive to situational constraints. For example, if the OPSCI and 16PF scales were both administered to a sample with work experience, the profile comparisons should be informative.

More research is also required on the development of psychometrically acceptable measures of the occupational persona and occupational beliefs. The Occupational Persona Self-Construct Inventory described in this study is in need of some slight item revision. It would also be desirable to compare this study's approach to the measurement of occupational beliefs with possible alternative approaches to the study of occupational beliefs.

It is considered very important by the author that researchers exploring the work orientation concept gravitate towards a consensus of opinion on what is an acceptable definition of work orientation and what are acceptable measures of work orientation. It will only be at this stage that the essential body of research data will being to emerge. At present, it is all too easy to dismiss previous research data because of differing definitions, differing research instruments and differing conceptual frameworks.

Finally, much research is required on the practical application of these theoretical developments. For example, what practical implications the occupational beliefs classification system has for the occupational guidance process; and within this context whether it is a useful practical framework for understanding occupational choice, occupational behaviour, career development and work motivation. Furthermore, empirical research is required on the usefulness of the model in influencing managerial philosophy, and whether the work orientation concept can be of practical value as a determinant of job design and in the selection of job candidates.

It is quite clear that this thesis has diverged somewhat from its original focus. However, this divergence is perhaps more in the

unforeseen range of application of the theoretical model developed in this study. The original focus is still present in that the aim of the thesis continues to revolve around the development of an acceptable conceptual framework and adequate measures for understanding occupational behaviour.

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APPENDICES

APPENDIX A

THE OPSCI DEVELOPMENT QUESTIONNAIRE

QUESTIONNAIRE

INSTRUCTIONS:

Please write your name and all other information asked for on the top line of the answer sheet provided. Inside this booklet are some questions about the way you might behave, feel and act at work. After each question you are asked to consider whether that behaviour or feeling applies or does not apply to you. There are three possible answers to each question. Try to decide whether "Yes/True" or "No/False" or "In between" represents your usual way of acting or feeling in that particular situation. Although you are to read the questions in this booklet you must record your answers on the answer sheet (next to the same number as in the booklet).

Example:

1. I understand the instructions.

    a. yes b. in between c. no

If your answer to the question is "Yes" you would circle the "a" answer in the left column of the answer sheet; if your answer is "In between" you would circle the "b" answer in the middle column of the answer sheet; and if your answer is "No" you would circle the "c" answer in the right column of the answer sheet.

Work quickly and do not spend too much time over any item but be sure to answer every question. Try not to fall back on the middle, 'uncertain' answers except when the answer at either end is really impossible for you. There are no "right" or "wrong" answers because everyone behaves, feels and acts differently. Finally, remember that you are only asked to comment about how you behave, feel, and act at work.

1. When I am talking about myself at work, I often worry that I might be boring people.

a. yes b. in between c. no

2. My appearance at work sometimes makes me feel uncomfortable in the company of other people.

a. yes b. in between c. no

3. I like mixing with other people at work.

a. yes b. in between c. no

4. I tend to solve a problem better by myself than by discussing it with others.

a. yes b. in between c. no

5. I often worry about things I should not have done or said at work.

a. yes b. in between c. no

6. I believe that people at work feel that I like to keep myself to myself.

a. yes b. in between c. no

7. I believe that generally I smile more than other people at work.

a. yes b. in between c. no

8. I feel that the good qualities of my work are not recognised.

a. yes b. in between c. no

9. I often say and do things at work without stopping to think.

a. yes b. in between c. no

10. I frequently find myself worrying about something at work.

a. yes b. in between c. no

11. I believe that some people at work feel that I have an aggressive manner.

a. yes b. in between c. no

12. At work generally, I am keen to prove myself more able than my colleagues.

a. yes b. in between c. no

13. I often have trouble making "small talk" with people at work.

a. yes b. in between c. no

14. I don't spend a great deal of money on clothes.

a. yes b. in between c. no

15. I believe that young people at work should be seen and not heard.

a. yes b. in between c. no

16. I am not slow to change my ways when presented with good reasons.

a. true b. in between c. false

17. I tend to dither when I have to make decisions at work.

a. yes b. in between c. no

18. I prefer to work as part of a team rather than by myself.

a. yes b. in between c. no

19. I resent being told what to do by superiors.

a. yes b. in between c. no

20. I don't like having to organise things at work.

a. true b. in between c. false

21. I don't often argue with people at work.

a. true b. in between c. false

22. I would do almost anything for a dare at work.

a. yes b. in between c. no

23. I generally do and say things quickly at work without stopping to think.

a. yes b. in between c. no

24. I sometimes feel happy at work, and sometimes sad without any real reason.

a. yes b. in between c. no

25. I can put my thoughts into words quickly.

a. yes b. in between c. no

26. I think that I would enjoy working as a social worker.

a. yes b. in between c. no

27. I usually feel uncomfortable when having to mix with a new group at work.

a. yes b. in between c. no

28. My future at work looks very dismal.

a. yes b. in between c. no

29. At work, I never put off until tomorrow what I ought to do today.

a. true b. in between c. false

30. I believe that without me my place of work would not be as efficient.

a. yes b. in between c. no

31. At work I tend to talk more about other people than myself.

a. yes b. in between c. no

32. I often like to play practical jokes at work.

a. yes b. in between c. no

33. At work, I tend to keep my thoughts about other people to myself.

a. yes b. in between c. no

34. I get easily hurt when people find fault with me or my work.

a. true b. in between c. false

35. I am happier listening than talking in a conversation with my colleagues.

36. I tend to be rather lively at work.

a. yes b. in between c. no

37. I don't care about clothes or how I look.

a. true b. in between c. false

38. I tend to avoid people who show their feelings at work.

a. true b. in between c. false

39. I find it easy to enjoy myself socially at work.

a. yes b. in between c. no

40. It is hard for people at work to get to know me really well.

a. true b. in between c. false

41. If fired or asked to leave my job, I would take it calmly thinking there is some reason.

a. true b. in between c. false

42. I tend to speak out when another's line of reasoning is in error.

a. yes b. in between c. no

43. I feel that I am not getting on as well as others at work.

a. yes b. in between c. no

44. I have had some quarrels with people at work.

a. yes b. uncertain c. no

45. I am usually calm and not easily upset at work.

a. yes b. in between c. no

46. My speaking voice tends to be rather quiet.

a. true b. in between c. false

47. I would hate one of my colleagues making me out to be inferior.

a. yes b. in between c. no

48. I believe that labour camps should be introduced for people who don't want to work.

a. yes b. in between c. no

49. I try to be very fashionable in my dress.

a. true b. in between c. false

50. I tend to get rather disorganised when very busy at work.

a. yes b. in between c. no

51. I strongly dislike some people at work for what they stand for.

a. yes b. in between c. no

52. I don't usually make a point of saying 'Good morning' and 'Good night' to people at work.

a. true b. in between c. false

53. I like to organise people at work.

a. yes b. in between c. no

54. I am usually not hesitant to express beliefs at meetings even if opposed to the majority view.

a. true b. in between c. false

55. I rarely have new ideas for ways of doing things at work.

a. true b. in between c. false

56. I am an easy-going person at work, not generally bothered about having things just so.

a. yes b. in between c. no

57. I don't often just say the first thing that comes into my head.

a. true b. in between c. false

58. I often feel self-conscious when talking to superiors at work.

a. yes b. in between c. no

59. I sometimes feel 'just miserable' at work for no good reason.

a. yes b. in between c. no

60. At work, I can often not be bothered to stop and listen to people and their problems.

a. true b. in between c. false

61. At work, even in company, I often tend to be wrapped in my own thoughts.

a. yes b. in between c. no

62. I make a point of not talking about religion or politics at work.

a. true b. in between c. false

63. I often wonder why I bother to go to work.

a. yes b. in between c. no

64. I tend to get easily annoyed when someone interrupts me.

a. yes b. in between c. no

65. I feel that my worth is not properly recognised by my superiors.

a. true b. in between c. false

66. I dislike being with a crowd at work who play jokes on one another.

a. yes b. in between c. no

67. I enjoy gossiping about other people at work.

a. yes b. in between c. no

68. I usually don't worry long after an embarrassing experience at work.

a. true b. in between c. false

69. I am usually more interested to hear other people's points of view rather than expressing my own.

a. yes b. in between c. no

70. I believe that my speaking voice tends to be rather loud.
a. yes b. in between c. no

71. I am generally quiet when with other people at work.
a. yes b. in between c. no

72. I tend to brood by myself when I have problems at work.
a. yes b. in between c. no

73. I get easily embarrassed when I see people in tears.
a. yes b. in between c. no

74. I never give any thought to the impression I create at work.
a. true b. in between c. false

75. I frequently wonder why people behave the way they do at work.
a. yes b. in between c. no

76. In general, I have a feeling of confidence about my ability to do my job.
a. yes b. in between c. no

77. It is important for me to have good relations with people at work.
a. yes b. in between c. no

78. I tend to get over excited when busy at work.
a. yes b. in between c. no

79. When annoyed or irritated with things at work, I tend to take out my temper on other colleagues.
a. yes b. in between c. no

80. It is not important for me to obtain promotion at work.
a. true b. in between c. false

81. Starting conversations with strangers at work is usually rather difficult for me.
a. true b. in between c. false

82. I believe that stricter immigration controls would reduce unemployment.
a. yes b. in between c. no

83. Appearances at work are very important to me.
a. yes b. in between c. no

84. I believe that most people at work don't give a damn for others.

a. true b. in between c. false

85. I tend to get rather disorganised when very busy at work.

a. yes b. in between c. no

86. I don't like being told what to do at work.

a. true b. in between c. false

87. I respect the boss who is considerate of others, and concerned that they think well of him.

a. yes b. in between c. no

88. I would get easily embarrassed sitting in the front row of meetings.

a. yes b. in between c. no

89. I believe that I have the ability to inspire people to work better.

a. yes b. in between c. no

90. At work, I often put off until tomorrow what I ought to do today.

a. true b. in between c. false

91. I like to plan my jobs at work carefully, well ahead of time.

a. yes b. in between c. no

92. I nearly always have a ready answer when people talk to me at work.

a. yes b. in between c. no

93. I often get a feeling at work that I want to do something more interesting without knowing what.

a. true b. in between c. false

94. It is of little importance to me if I don't make any new friends at work.

a. true b. in between c. false

95. At work, I am the type of person who can help others let off steam.

a. yes b. in between c. no

96. I am sometimes touchy about things at work.

a. yes b. in between c. no

97. There is little chance for promotion in my job unless I get a lucky break.

a. true b. in between c. false

98. I believe that I am more capable than most of my superiors.

a. yes b. in between c. no

99. I try to help colleagues at work, even when there is nothing in it for me.

a. true b. in between c. false

100. I like cracking jokes and telling funny stories to friends at work.

a. yes b. in between c. no

101. My feelings are not easily hurt at work.

a. true b. in between c. false

102. At work, I don't always talk about things which I know will interest the other person.

a. true b. in between c. false

103. I believe that I dress well at work.

a. yes b. in between c. no

104. I like working alone.

a. yes b. in between c. no

105. At work, I sometimes feel that people don't find it easy to talk to me.

a. true b. in between c. false

106. I believe that people at work would like me to talk more.

a. yes b. in between c. no

107. I enjoy periods at work of doing nothing but thinking.

a. yes b. in between c. no

108. I believe that some people at work dislike me.

a. yes b. in between c. no

109. I believe that people like me better once they have got to know me rather than from first impressions.

a. yes b. in between c. no

110. My advice to people is to be cautious - take time and think things over.

a. yes b. in between c. no

111. I sometimes tend to be rather sharp and abrupt with people at work.

a. yes b. in between c. no

112. I often cannot keep my mind on one job at a time.

a. true b. in between c. false

113. I tend to be rather self-opinionated in company at work.

a. yes b. in between c. no

114. Whenever I take on a job, I like to do it as well as I possibly can.

a. yes b. in between c. no

115. I believe that respecting authority and bosses at work is not as important in the modern world as in the time of our forefathers.

a. yes b. in between c. no

116. There are some people I like to tease at work.

a. yes b. in between c. no

117. I tend to allow others to use me at work.

a. yes b. in between c. no

118. I believe that most people at work don't know when they are well off.

a. true b. in between c. false

119. I often feel in my job that very little works out the way it should.

a. yes b. in between c. no

120. I would feel resentful if I had a new idea at work which was thwarted by a superior.

121. I can take kidding or teasing at work without getting upset or nervous.

a. yes b. in between c. no

122. I don't believe that there is any point in questioning bosses' decisions.

a. true b. in between c. false

123. I often say the first thing that comes into my head when my superior asks a question.

a. yes b. in between c. no

124. I would call myself a happy-go-lucky person at work.

a. yes b. in between c. no

125. My feelings can't always easily be put into words.

a. true b. in between c. false

126. I often long for excitement at work.

a. yes b. in between c. no

127. I prefer work in which I can show skill or knowledge, rather than work which takes me into contact with different people.

a. yes b. in between c. no

128. I am usually one of the first to talk to new people at work.

a. yes b. in between c. no

129. I sometimes get cross at work.

a. yes b. in between c. no

130. Sometimes at work I have the feeling that other people are using me.

a. yes b. in between c. no

131. Sometimes at work, I have the feeling that people would be reluctant to give me advice even if they wanted to.

a. yes b. in between c. no

132. I believe that in my present work I would not be easily replaced by someone as good.

a. true b. in between c. false

133. I like playing pranks on people at work.

a. yes b. in between c. no

134. I am often openly critical of other people's work.

a. true b. in between c. false

135. I tend to worry about awful things that might happen at work.

a. yes b. in between c. no

136. I usually speak too much at work.
a. yes b. in between c. no

137. I like a job which gives me time to meet people.
a. yes b. in between c. no

138. Many people at work talk over their problems with me.
a. yes b. in between c. no

139. I usually avoid getting involved with people at my work.
a. true b. in between c. false

140. I am slow to trust people at work.
a. yes b. in between c. no

141. At work, I believe that it is important to do a good job rather than get on with the right people.
a. yes b. in between c. no

142. I am easily embarrassed when people watch me work.
a. yes b. in between c. no

143. I doubt the honesty of people who are mor friendly than I would expect them to be at work.
a. yes b. in between c. no

144. I feel that I am not as capable as most people doing the same job.
a. true b. in between c. false

145. At work, I rarely get so involved in arguments that I can't control my voice.
a. true b. in between c. false

146. At work, I am usually slow and unhurried in the way I move.
a. yes b. in between c. no

147. I always like to be the best at whatever job I tackle.
a. yes b. in between c. no

148. I often get loud or noisy at times or places when I probably shouldn't.
a. yes b. in between c. no

149. Anyone who criticises the beliefs of another person is behaving badly.
a. yes b. in between c. no

150. I believe that to work effectively bosses must be obeyed and respected.

a. yes b. in between c. no

151. I believe that there are two kinds of people at work: the responsible and the irresponsible.

a. yes b. in between c. no

152. I tend to keep in the background when it comes to making decisions at work.

a. yes b. in between c. no

153. I think that an unexamined belief is a belief not worth having.

a. yes b. in between c. no

154. I get angry and upset when the reason for doing a job is not made clear to me.

a. yes b. in between c. no

155. Generally at work, I feel that things will always sort themselves out and come right in the end.

a. yes b. in between c. no

156. If a person shouted at me at work, I would shout back.

a. yes b. in between c. no

157. My mood at work does not often go up and down.

a. true b. in between c. false

158. I like doing jobs in which I have to act quickly.

a. yes b. in between c. no

159. I enjoy helping people at work, even if I am doing more than my fair share of work.

a. yes b. in between c. no

160. I prefer to share the responsibility for my work with other people.

a. yes b. in between c. no

161. It seems to me that most people in positions of authority are not really interested in the problems of the average man.

a. yes b. in between c. no

162. Once in a while at work, I lose my temper and get angry.

a. yes b. in between c. no

163. I believe that people at work treat me less reasonably than my good intentions deserve.

a. yes b. in between c. no

164. I believe that I am very good at organising people.

a. yes b. in between c. no

165. I tend to be too shy to tell long funny stories to friends at work.

a. yes b. in between c. no

166. I believe that most people at work would describe me as a tolerant person.

a. yes b. in between c. no

167. I sometimes lose sleep over my worries at work.

a. yes b. in between c. no

168. In most conversations I have at work, I usually tend to speak more than the other person.

a. true b. in between c. false

169. I usually stay in the background during discussions at tea-breaks.

a. true b. in between c. false

170. I make little attempt to look after my appearance at work.

a. true b. in between c. false

171. I like people who show their feelings.

a. yes b. in between c. no

172. I enjoy, or would enjoy, being in charge of people at work.

a. yes b. in between c. no

173. People frequently approach me at work just for a friendly chat.

a. yes b. in between c. no

174. I have got into trouble at work through misunderstanding the way people behave.

a. yes b. in between c. no

175. I sometimes form immediate likes or dislikes to people I have just met.

a. yes b. in between c. no

176. I would rather work with several people under me rather than in a team.

a. yes b. in between c. no

177. I believe that I am no more inclined to be nervous than most of my work colleagues.

a. yes b. in between c. no

178. I have been or nearly have been in a fight at work.

a. yes b. in between c. no

179. I feel somewhat awkward in large groups, and generally do not show up as well as I should.

a. yes b. in between c. no

180. I would not describe myself as an ambitious person.

a. true b. in between c. no

181. I am sometimes too anxious to make new friends at work.

a. yes b. in between c. no

182. I believe that sensible people do not stick to exact rules nowadays as much as people used to.

a. yes b. in between c. no

183. I believe that there is only one correct way of running things efficiently at my work.

a. yes b. in between c. no

184. I get annoyed by people who are anxious to please the boss.

a. yes b. in between c. no

185. During meeting at work, I am not shy to speak up.

a. true. b. in between c. false

186. I believe that rules must be followed strictly if work is to be efficient.

a. yes b. in between c. no

187. I believe that people at work consider me a predictable person.

a. yes b. in between c. no

188. I often worry about losing my job.

a. yes b. in between c. no

189. I don't often do things at work on the spur of the moment.

a. true b. in between c. false

190. I am sometimes bubbling over with energy at work, and sometimes very sluggish.

a. yes b. in between c. no

191. I tend to get very involved with people and their problems at work.

a. true b. in between c. false

192. I believe that the situation of the average man is getting worse, not better.

a. yes b. in between c. no

193. I have sometimes told lies to people at work.

a. yes b. in between c. no

194. My job comes before everything else in my life.

a. yes b. in between c. no

195. I believe that I am quite popular at work.

a. yes b. in between c. no

196. At work, I usually make an effort to keep other people cheerful.

a. yes b. in between c. no

197. I tend to get irritated by stupid people.

a. yes b. in between c. no

198. I often get 'butterflies in my tummy' on important occasions.

a. yes b. in between c. no

199. I am careful to turn up or keep to deadlines when it is expected of me.

a. yes b. in between c. no

200. I never give any thought to the impression I create at work.

a. true b. in between c. false

201. I would miss the company if I didn't work.

a. yes b. in between c. no

202. I would tend to avoid a person I did not know well, if I found he or she crying at work.

a. yes b. in between c. no

203. I believe that I could do a better job than my present boss.

a. yes b. in between c. no

204. I believe that my manner at work is very friendly.

a. yes b. in between c. no

205. When I make a decision at work, my main concern is to avoid upsetting my colleagues.

a. yes b. in between c. no

206. If someone annoys me at work, I usually try to hide the fact.

a. true b. in between c. false

207. If made unemployed my chances of getting another job would be better than most in the same position.

a. yes b. in between c. no

208. I don't mind if people interfere with my affairs at work.

a. true b. in between c. no

209. I tend to worry before starting a new task at work.

a. yes b. in between c. no

210. Sometimes I get so wound up in discussions at work that I say things which I often regret afterwards.

a. yes b. in between c. no

211. I believe that I speak very well.

a. yes b. in between c. no

212. I do not enjoy teasing or kidding members of the opposite sex.

a. true b. in between c. false

213. I believe that young people generally have too much to say about world events.

a. yes b. in between c. no

214. I often question my boss's decisions.

a. yes b. in between c. no

215. Too many people talk too much about new ideas without getting on with their present job.

a. yes b. in between c. no

216. There is nothing to be gained by false modesty about your work.

a. true b. in between c. false

217. I believe that people at work would consider me an old-fashioned person.

a. yes b. in between c. no

218. I tend to tease other people at work.

a. yes b. in between c. no

219. I am always careful to do my job properly.

a. yes b. in between c. no

220. I like acting on impulses of the moment even if they land me in later difficulties.

a. yes b. in between c. no

221. I don't often feel 'fed up' at work.

a. true b. in between c. false

222. I enjoy my work.

a. yes b. in between c. no

223. I have never been late for work.

a. true b. in between c. false

224. People at work probably think that I am rather arrogant.

a. yes b. in between c. false

225. I am ambitious and, if I'm honest, I don't really care who I hurt on the way.

a. true b. in between c. false

226. I believe that people should be sacked if they can't do their job properly.

a. yes b. in between c. no

227. When newly introduced to people, I try to put them at ease with jokes and good humour.

a. yes b. in between c. no

228. If people watch me work, I tend to get embarrassed.

a. yes b. in between c. no

229. Sometimes I tend to lecture people at work with less experience than me.

a. yes b. in between c. no

230. I have very little time for "small talk" at work.

a. yes b. in between c. no

231. An important aspect of my job is the opportunity to get to know people.

a. yes b. in between c. no

232. I try to avoid saying unusual things that may embarrass people.

a. yes b. in between c. no

233. I can usually do things better by figuring them out alone than by talking to others.

a. yes b. in between c. no

234. I appear to have many friends at work.

a. yes b. in between c. no

235. The way some people behave at work is really hard to understand.

a. yes b. in between c. no

236. I enjoy having responsibility at work.

a. yes b. in between c. no

237. I often find my feelings boiling up inside me at work.

a. yes b. in between c. no

238. Company doesn't inhibit me, if I feel annoyed I usually let people know.

a. yes b. in between c. no

239. I need friends at work more than they seem to need me.

a. yes b. in between c. no

240. I am not usually quiet and reserved in company at work.

a. true b. in between c. false

241. I have told 'blue jokes' in mixed company at work.

a. yes b. in between c. no

242. I believe that nowadays bosses are too soft on people who do not do their jobs properly.

a. yes b. in between c. no

243. I like to go to work in the morning knowing exactly what has to be done during the day.

a. yes b. in between c. no

244. My blood boils when others won't admit they're wrong.

a. yes b. in between c. no

245. I often feel that in discussions with work colleagues, I don't get a chance to express my point of view.

a. true b. in between c. false

246. I enjoy talking about how my work could be improved.

a. yes b. in between c. no

247. I am not usually prepared to challenge my superiors even if I feel that they are making a wrong decision.

a. true b. in between c. false

248. I often get into trouble at work because I do things without thinking.

a. yes b. in between c. no

249. I have a serious attitude to my work.

a. yes b. in between c. no

250. I often feel listless and tired at work for no good reason.

a. yes b. in between c. no

251. I never take more breaks from my work than I am allowed.

a. true b. in between c. false

252. People at work probably think that I am rather critical of others.

a. yes b. in between c. no

253. There is never enough fun and laughter at work.

a. true b. in between c. false

254. At work I find myself thinking over quite trivial troubles again and again, and I have to make a real effort to put them out of my mind.

a. true b. in between c. false

255. At work I am not slow to give advice.

a. true b. in between c. false

256. I believe that I speak too quickly.

a. yes b. in between c. no

257. When I make new friends at work, it is usually me who makes the first move.

a. yes b. in between c. no

258. I like to see as few people as possible at work.

a. yes b. in between c. no

259. I don't understand why people lose their temper at work.

a. true b. in between c. false

260. When I differ with someone on a point of view, I like to find out what our difference basically means.

a. yes b. in between c. no

261. I am often troubled with feelings of inferiority at work.

a. yes b. in between c. no

262. I believe that the most important thing in life is to do what I like.

a. yes b. in between c. no

263. I have not known people at work who I have strongly disliked.

a. true b. in between c. false

264. I believe that I am more sensitive than most of my work colleagues.

a. yes b. in between c. no

265. Attractive people of the opposite sex make me feel shy.

a. yes b. in between c. no

266. I believe that other people at work think of me as being very lively.

a. yes b. in between c. no

267. If people would talk less and work more, everybody would be better off.

a. true b. in between c. false

268. I believe that no decisions should be made at work until everybody's views have been heard.

a. yes b. in between c. no

269. I tend to worry if I have jobs left undone at the end of the day.

a. yes b. in between c. no

270. I don't enjoy working under pressure.

a. true b. in between c. false

271. I don't enjoy being given a task to do by myself.

a. true b. in between c. false

272. I clown around, horseplay or act up when I know that the boss is not around.

a. yes b. in between c. no

273. My spirits at work generally stay high, no matter how much trouble I meet.

a. true b. in between c. false

274. I always give a good day's work in return for my pay.

a. yes b. in between c. no

275. I believe that earning a wage is a serious matter.

a. yes b. in between c. no

276. A lively argument at work leaves me shaky and exhausted, so that I can't settle down to what I was doing.

a. true b. in between c. false

277. I would be very unhappy if I could not see lots of people at work most of the time.

a. true b. in between c. no

278. I get irritated with people at work who want to talk rather than get on with the job.

a. true b. in between c. false

279. I often find it difficult to mix with someone from a different background from mine.

a. yes b. in between c. no

280. I really think that I have more intelligence and initiative than many people doing the same job as me.

a. yes b. in between c. no

281. I tell the truth and usually say things quite frankly to work colleagues.

a. yes b. in between c. no

282. I never have strong feelings of hate towards my boss.

a. true b. in between c. false

283. I have been afraid of things or people at work that I know could not hurt me.

a. yes b. in between c. no

284. I want to see as few people as possible at work.

a. yes b. in between c. no

285. I get embarrassed and blush easily in new situations.

a. true b. in between c. false

286. I enjoy having plenty of excitement and bustle around me at work.

a. yes b. in between c. no

287. I believe that obedience and respect for authority are the most important virtues people should learn.

a. yes b. in between c. no

288. While the use of force is wrong by and large, it is sometimes the only way possible to get things done.

a. yes b. in between c. no

289. I don't enjoy having power and responsibility at work.

a. true b. in between c. false

290. I tend to resist authority; I argue or don't go along with what people tell me to do.

a. yes b. in between c. no

291. At work I sometimes say things without thinking.

a. yes b. in between c. no

292. I believe that I am mot very good at telling funny stories.

a. yes b. in between c. no

293. If I did not need the money, I would rather stay at home on my own than go to a boring job.

a. yes b. in between c. no

294. I don't enjoy doing work knowing that success or failure depends on me alone.

a. true b. in between c. false

295. I believe that I am attentive to other people's problems at work.

a. yes b. in between c. no

296. I believe that it is important to make decisions regardless of what others think or feel.

a. yes b. in between c. no

297. I feel bad and want to get away by myself when things don't go right for me, or when people tell me I've done something wrong.

a. yes b. in between c. no

298. I tend to feel irritated when there is much noise at work.

a. yes b. in between c. no

299. I would consider it more embarrassing to be caught loafing on a job than losing my temper with a number of people around.

a. yes b. in between c. no

300. I feel that my social life at work is adequate for me.

a. yes b. in between c. no

301. In the long run I believe that it is better for our country if young people are allowed a great deal of personal freedom, and are not strictly disciplined.

a. yes b. in between c. no

302. I believe that a person who gets enthusiastic about too many causes is likely to be a rather "wishy-washy" sort of person.

a. yes b. in between c. no

303. I get started on my regular job without needing to be told or reminded.

a. yes b. in between c. no

304. I am completely free of prejudices of any kind.

a. yes b. in between c. no

305. I enjoy discussions about the meaning of work.

a. yes b. in between c. no

306. Upsetting the dignity of bosses and superiors always amuses me.

a. yes b. in between c. no.

307. I rarely get annoyed in company.

a. true b. in between c. false

308. I never do any more work than is expected of me.

a. true b. in between c. false

309. I sometimes have arguments without backing up my views with evidence.

a. yes b. in between c. no.

APPENDIX B

THE OPSCI DEVELOPMENT CODEBOOK

CODEBOOK

COLUMN	ITEM	CODES
1, 2, 3	Identification	As on questionnaire
4	Card Sequence Number	1 or 2 or 3 or 4 or 5
5	Sex	1. Male 2. Female 3. Not Ascertained
6, 7	Age in Years	Code exact number 99 Not Ascertained
8	Occupation	1. Professional or Senior Management 2. Minor Professional, Technical or Line Management 3. Commercial and Personal Services 4. Craft or skilled 5. Semi-skilled and unskilled 6. Not Ascertained
9-80	Questionnaire Nos. 1-72	0. Not Ascertained 1. Yes/True 2. No/False 3. In Between
Card 2 5-80	Questionnaire Nos. 73-148	" "
Card 3 5-80	Questionnaire Nos. 149-224	" "
Card 4 5-80	Questionnaire Nos. 225-300	" "
Card 5 5-13	Questionnaire Nos. 301-309	" "

APPENDIX C

OPSCI DEVELOPMENT FACTOR ANALYSES - TECHNICAL DETAILS

Factor Analysis I

1. No. of subjects = 404

2. Pearson's product-moment method of correlation used to generate the matrix (see overleaf).

3. Bartlett's test for significance of correlation matrix = 4.35, which is significant at .01 level.

4. Communality Estimates

Variable	Communality	Variable	Communality	Variable	Communality	Variable	Communality
5	.365	73	.388	143	.373	226	.487
8	.301	78	.517	144	.563	237	.570
9	.288	79	.286	152	.539	245	.312
10	.466	81	.406	158	.414	247	.474
13	.495	88	.447	160	.416	250	.394
18	.412	92	.276	161	.424	252	.341
21	.502	93	.388	163	.307	261	.426
24	.356	96	.397	165	.616	265	.321
27	.363	97	.314	167	.348	269	.475
28	.328	109	.351	169	.403	270	.419
34	.380	117	.321	175	.342	271	.446
36	.362	119	.288	179	.422	276	.453
43	.274	122	.335	181	.490	278	.555
46	.512	123	.432	192	.411	283	.389
51	.298	125	.268	197	.352	285	.483
55	.473	126	.302	198	.389	289	.294
58	.572	134	.324	205	.342	292	.549
63	.348	135	.469	209	.529	294	.344
64	.262	140	.445	210	.426	297	.489
71	.377	142	.622	220	.435	298	.378

5. Principal factoring method was employed with an iteration procedure to improve the estimates of communality.

6. The Kaiser criterion (ie eigenvalue of at least 1.0) was used for retaining factors following rotation.

7. The Varimax method of rotation was used.

VAR	5	8	9	10	13	18	21	24	27	28	34	36	43	46	51	55	58	63	64	71	73	78	79	81	88	92	93	96	97	109	117	119
8	2																															
9	24	-6																														
10	31	11	17																													
13	5	4	8	16																												
18	15	8	16	10	1																											
21	-1	-5	4	9	9	8																										
24	13	11	15	15	18	18	6																									
27	25	6	14	23	19	8	2	13																								
28	12	10	1	13	14	3	-4	14	9																							
34	20	13	6	30	15	12	1	21	18	14																						
36	11	6	8	11	4	9	3	9	13	17	5																					
43	4	11	2	8	7	-4	-3	4	6	7	8	6																				
46	8	4	-3	2	16	2	10	6	20	6	15	16	13																			
51	3	3	4	7	12	1	1	7	1	7	9	2	-1	6																		
55	8	11	11	12	5	19	-2	15	13	4	19	3	8	5	-5																	
58	27	10	16	26	9	19	5	22	36	13	25	7	11	17	9	19																
63	0	9	7	1	-7	2	-2	-2	3	7	2	11	1	-5	9	3	4															
64	8	5	4	8	1	5	1	9	6	6	9	-3	1	4	1	7	10	-3														
71	10	11	4	16	17	7	15	11	11	0	15	10	10	24	4	7	4	1	14													
73	14	6	17	20	11	7	-6	9	13	5	16	4	8	18	9	7	13	2	8	18												
78	18	4	14	15	14	6	-14	12	11	11	20	7	7	15	9	8	21	13	21	13	20											
79	13	2	15	15	5	7	11	4	7	7	11	11	-4	8	13	6	11	8	-1	7	7	9										
81	13	4	7	21	30	4	6	18	27	4	10	7	2	10	2	11	26	3	1	20	12	10	9									
88	11	10	15	15	0	8	3	14	8	1	11	4	4	15	0	14	16	-1	1	19	23	7	5	27								
92	5	12	4	7	4	7	-4	5	9	2	14	21	9	13	7	17	7	6	9	13	5	11	8	6	13							
93	16	4	12	9	1	9	-5	12	4	10	7	5	11	11	9	13	9	5	12	8	13	9	8	9	13	10						
96	12	6	5	16	15	6	-7	18	7	14	19	4	1	13	11	16	15	-6	15	10	15	23	7	11	10	12	25					
97	12	3	6	11	8	15	0	12	16	14	13	6	8	0	5	13	18	6	14	1	9	9	10	13	5	13	20	13				
109	14	3	7	12	5	15	3	6	19	-1	9	7	3	10	2	10	10	-1	2	17	6	-2	7	16	7	13	19	7	14			
117	4	7	5	12	5	9	-2	4	7	7	11	13	7	8	4	12	8	-6	18	12	13	15	-3	5	1	21	18	9	9	12		
119	10	10	17	12	13	4	-6	16	9	14	12	14	9	11	5	7	14	-1	8	13	9	19	6	13	9	4	14	14	19	4	20	
122	7	4	16	20	9	8	-4	22	8	9	15	13	10	12	10	16	20	13	2	15	13	22	7	20	13	16	15	11	15	15	10	19
123	13	5	25	18	7	5	3	17	13	3	9	5	-1	2	11	14	23	12	18	10	17	24	15	5	16	12	20	14	13	4	16	11
125	18	2	10	13	14	6	7	19	14	11	24	7	4	12	-1	6	17	-1	8	11	10	12	12	15	13	7	19	20	18	18	12	17
126	19	9	13	13	6	13	3	15	19	12	11	6	15	8	8	4	14	11	5	11	17	16	11	5	2	9	18	6	22	22	10	10
134	8	0	11	11	5	2	10	5	6	0	8	10	2	2	4	4	10	1	7	5	10	12	12	8	9	16	5	11	5	3	6	9
135	17	5	12	19	8	12	1	14	10	18	26	7	4	1	16	15	19	4	17	19	30	31	8	10	10	8	12	25	12	5	25	17
140	14	13	12	10	8	10	-3	20	18	15	11	10	9	13	11	9	26	16	20	10	18	19	11	14	5	14	22	21	16	14	18	14
142	19	0	21	29	12	12	8	6	24	12	20	0	15	12	14	20	31	7	9	12	25	24	8	24	18	7	11	14	10	14	20	19
143	21	7	14	14	14	12	7	15	21	13	12	12	7	11	9	9	25	7	12	14	21	14	15	18	10	3	19	12	17	24	24	16
144	8	0	15	10	3	9	5	12	4	12	14	2	14	6	-4	18	25	7	0	6	10	18	14	11	7	5	9	11	20	7	5	15
152	15	12	13	25	10	10	-4	13	15	16	21	7	8	11	6	10	21	9	3	15	16	11	5	18	8	12	9	8	16	12	17	18
158	-1	8	-1	10	8	6	-6	11	7	7	25	16	4	12	3	23	14	3	7	20	15	2	4	15	11	18	10	18	19	16	14	8
160	7	10	16	4	5	32	8	20	8	9	8	11	7	10	1	13	12	7	5	17	21	10	8	4	10	18	11	12	13	21	21	15
161	12	14	19	11	9	6	-3	10	15	19	10	11	16	14	10	5	25	10	9	13	13	11	8	7	4	12	20	11	27	18	12	21
163	7	9	9	11	11	13	3	11	14	11	8	6	4	-8	7	2	12	12	4	6	7	13	8	7	8	9	9	10	16	3	8	10
165	19	13	12	21	21	3	1	15	17	5	21	2	5	12	5	13	23	6	5	16	13	15	6	35	30	5	7	12	10	16	11	19
167	19	0	12	26	13	8	2	17	11	9	20	13	7	8	5	6	9	4	10	22	23	24	6	8	8	15	6	18	13	3	15	18
169	10	9	12	17	11	7	-3	9	7	11	15	9	14	10	-2	9	11	3	13	23	21	19	5	15	21	10	16	22	12	9	17	15
175	15	4	17	15	5	1	5	16	12	5	15	2	2	6	22	14	24	8	6	7	12	12	12	15	16	19	5	18	16	4	13	17
179	12	8	9	17	18	6	3	11	20	13	13	4	8	12	-1	10	24	1	12	11	11	15	18	24	14	5	17	18	16	13	16	18
181	7	7	10	16	14	7	4	12	15	8	16	5	13	7	2	6	17	-8	2	6	12	16	10	19	3	9	14	14	4	10	10	14
192	10	10	8	22	13	17	2	13	8	15	21	13	6	12	9	16	13	4	10	13	20	9	11	0	2	7	24	20	20	13	10	14
197	4	3	-1	4	8	2	-9	5	13	-1	8	3	2	6	6	3	11	-1	11	12	16	5	-2	12	5	12	17	16	8	5	10	5
198	18	-2	16	19	5	14	6	14	18	7	21	-2	2	7	7	5	22	1	8	8	20	16	12	19	14	-1	17	12	22	12	6	14
205	20	5	11	12	4	22	3	9	6	10	12	8	1	7	3	7	15	-2	10	11	9	13	3	11	11	6	14	12	22	15	19	15
209	16	9	21	22	8	5	3	17	18	9	17	2	11	5	2	11	23	-2	4	18	21	16	9	17	15	7	15	23	11	7	11	17
210	23	3	20	19	3	16	-6	19	7	6	19	7	12	6	15	19	23	5	9	15	17	19	8	10	17	12	14	24	14	14	9	21
220	4	3	13	2	2	6	1	15	3	1	16	0	5	2	17	22	18	8	6	3	12	9	4	9	6	11	15	6	8	8	7	16

VAR	122	123	125	126	134	135	140	142	143	144	152	158	160	161	163	165	167	169	175	179	181	192	197	198	205	209	210	220	226	237	245	247
123	17																															
125	15	12																														
126	9	16	15																													
134	5	13	8	13																												
135	14	22	15	15	15																											
140	18	24	14	12	9	21																										
142	28	21	15	15	7	30	21																									
143	12	16	6	17	12	17	33	20																								
144	16	20	14	16	7	14	26	23	11																							
152	24	12	17	17	2	20	22	33	19	35																						
158	18	10	10	11	10	10	15	11	13	10	18																					
160	22	12	19	14	13	16	17	15	18	13	26	14																				
161	14	19	21	27	13	16	26	20	26	7	15	10	17																			
163	9	12	5	14	10	11	15	5	18	18	20	8	13	8																		
165	17	18	11	10	7	15	20	26	18	20	26	12	5	17	4																	
167	12	16	14	14	13	33	13	16	16	14	12	8	13	15	15	0																
169	14	15	7	10	9	24	16	21	21	24	28	16	11	11	18	29	14															
175	21	23	18	11	16	21	20	25	22	18	23	18	16	13	13	19	12	13														
179	11	19	13	16	4	16	25	30	18	29	24	13	9	11	16	34	16	29	22													
181	15	11	18	15	26	16	12	14	10	13	23	-2	14	8	14	15	19	15	14	21												
192	10	14	16	18	11	14	11	14	23	1	9	24	17	23	12	7	13	2	15	11	10											
197	8	5	12	9	14	6	18	3	20	2	11	19	5	16	4	3	12	2	16	10	0	10										
198	14	11	23	14	3	16	13	27	10	15	20	15	15	16	4	20	14	11	19	15	14	21	8									
205	15	14	11	10	0	17	14	15	16	8	20	15	24	11	21	12	7	19	13	14	13	15	5	19								
209	14	13	14	8	4	19	21	22	20	11	25	12	12	14	14	18	19	20	20	20	11	16	9	33	9							
210	20	20	15	15	18	23	21	22	24	19	24	19	17	19	10	22	19	16	23	13	9	22	11	16	8	17						
220	14	25	13	8	15	13	16	12	16	16	20	12	20	8	17	15	8	7	19	8	14	16	8	11	16	6	18					
226	9	10	12	18	19	15	18	5	25	1	16	11	18	20	14	13	10	9	14	4	7	16	20	7	4	15	24	11				
237	19	18	20	17	18	34	23	19	18	12	23	9	14	25	10	25	17	13	19	17	18	16	8	14	9	21	34	16	15			
245	5	13	9	9	8	9	12	7	21	15	22	8	17	20	19	20	6	15	14	11	14	7	10	14	15	12	18	19	11	16		
247	30	13	19	12	6	15	10	34	18	11	25	14	20	19	12	14	9	18	16	15	18	15	3	20	13	14	19	18	-3	10	17	
250	8	15	7	10	4	21	19	10	12	12	7	5	15	16	8	7	14	5	13	5	4	22	4	10	8	7	17	25	7	28	18	14
252	8	15	6	10	18	8	13	9	12	3	11	17	8	0	8	11	3	11	17	13	19	15	14	10	9	2	16	15	12	14	12	10
261	16	17	13	11	9	22	16	23	16	23	29	1	13	13	14	25	23	27	14	31	24	13	8	13	14	21	19	10	15	18	22	16
265	14	10	12	15	5	24	16	6	14	11	17	14	8	13	19	17	15	20	16	16	8	8	12	10	22	16	13	20	9	22	12	10
269	13	9	16	6	2	16	17	7	18	7	16	9	14	9	5	23	19	15	9	13	19	8	14	22	17	26	14	20	10	17	22	13
270	16	17	14	12	3	11	6	16	10	13	12	1	21	23	5	8	15	10	7	11	2	11	-3	16	11	14	18	11	4	14	15	18
271	13	24	3	9	0	19	5	4	6	9	18	12	13	10	9	19	15	18	19	11	15	8	1	10	16	14	15	12	6	6	14	6
276	17	17	13	7	13	34	22	23	20	13	21	15	15	14	9	19	21	12	16	14	8	13	11	14	16	26	29	22	20	21	10	22
278	14	8	23	10	4	15	31	14	29	7	10	12	17	21	15	15	18	16	6	14	5	20	23	20	16	19	23	10	25	12	18	21
283	16	22	12	11	10	22	24	24	16	22	15	9	14	11	8	19	7	8	19	23	8	5	5	13	8	14	21	13	1	14	16	8
285	21	19	14	9	10	22	19	27	16	14	30	19	13	17	10	22	12	24	13	22	16	11	0	20	12	34	25	16	14	20	9	13
289	16	2	12	13	0	18	12	12	10	16	25	15	14	13	12	6	4	17	14	3	9	18	4	8	20	13	10	2	8	12	9	18
292	15	7	15	19	10	20	20	19	21	19	31	18	7	19	7	42	16	27	24	20	16	12	5	20	15	27	19	15	18	24	15	16
294	16	10	15	10	7	12	18	17	10	24	24	20	10	8	10	12	13	17	10	20	18	16	11	19	15	22	15	14	1	11	18	26
297	18	12	14	12	9	27	23	23	13	17	29	15	17	11	14	20	24	26	15	24	11	10	12	23	21	19	28	25	12	25	22	20
298	12	14	13	13	18	14	16	16	14	19	18	12	16	19	11	19	22	21	11	22	8	10	19	13	12	22	26	7	17	19	16	14

VAR	5	8	9	10	13	18	21	24	27	28	34	36	43	46	51	55	58	63	64	71	73	78	79	81	88	92	93	96	97	109	117	119
226	14	10	9	15	11	14	-2	10	11	-2	16	13	3	5	5	0	-3	-3	16	16	14	10	5	5	3	14	9	5	5	16	17	16
237	21	10	19	17	8	1	-12	22	18	13	16	8	-3	9	14	8	26	4	14	1	11	36	12	10	12	9	20	35	14	7	18	22
245	14	2	14	9	3	10	1	11	5	14	9	13	5	-1	6	6	11	11	10	6	9	13	9	6	17	7	4	13	13	9	11	18
247	8	3	14	13	10	8	7	9	13	7	12	4	9	6	1	25	19	4	7	19	18	16	5	21	13	16	20	9	17	24	18	17
250	10	7	10	6	3	2	-8	19	1	23	10	-1	10	-1	12	8	11	-2	12	-1	6	16	4	-2	6	3	16	20	12	2	6	14
252	2	7	2	3	2	10	0	3	4	1	2	9	7	7	17	10	5	2	10	11	2	9	16	8	9	10	13	13	5	8	13	15
261	20	6	13	28	17	0	-1	2	9	12	16	4	6	5	7	11	11	3	7	23	20	21	5	16	11	12	8	14	10	4	16	15
265	9	4	9	11	19	6	-1	10	7	10	16	8	-2	0	8	13	20	2	8	4	10	17	3	11	8	14	13	14	10	7	10	10
269	21	-3	11	21	15	11	10	18	9	5	22	8	4	10	3	10	25	0	11	13	22	17	1	14	19	4	11	9	14	14	11	15
270	10	3	16	9	-5	8	10	13	8	2	7	10	4	1	-2	3	11	11	15	8	10	-1	3	7	9	9	21	-1	19	18	2	12
271	14	7	4	10	1	5	-6	7	4	-2	17	4	13	-1	0	12	12	2	4	14	10	10	-2	7	2	9	13	6	9	5	4	11
276	13	-3	7	13	4	8	-6	16	7	11	17	9	5	7	6	20	15	-3	11	8	26	17	8	15	14	16	11	10	10	5	18	22
278	17	13	8	19	20	16	5	8	18	13	21	16	9	18	7	13	14	10	14	26	17	18	3	15	7	10	18	18	15	22	14	16
283	17	-3	15	13	0	8	4	12	11	12	17	3	10	1	8	11	22	12	12	4	9	15	22	8	0	3	5	15	9	-2	2	16
285	18	4	9	15	13	5	-2	10	16	9	15	3	11	14	9	22	17	6	0	12	15	10	13	15	14	10	20	13	13	6	15	16
289	10	13	10	15	-3	12	-2	5	3	12	8	20	6	8	1	20	9	10	12	16	13	10	4	6	8	15	18	7	18	8	12	17
292	14	21	0	13	14	6	7	21	16	11	17	1	13	23	8	14	16	9	9	17	12	18	0	24	15	10	12	20	13	13	15	16
294	6	13	10	12	7	0	2	12	6	5	18	1	19	6	-2	9	20	5	9	11	20	12	11	11	11	9	16	15	19	9	17	18
297	18	5	15	19	13	10	1	17	13	7	25	8	8	9	18	11	16	3	15	23	20	16	5	17	9	6	19	20	12	16	15	14
298	15	8	6	19	15	12	1	17	16	-2	15	9	13	10	8	14	16	1	13	21	14	15	-2	8	13	14	9	14	10	15	12	13

VAR	250	252	261	265	269	270	271	276	278	283	285	289	292	294	297
252	5														
261	17	11													
265	15	6	11												
269	14	8	31	15											
270	15	-2	13	11	11										
271	1	3	15	15	7	16									
276	13	13	21	19	27	7	14								
278	12	17	24	15	23	11	5	19							
283	12	12	15	15	4	16	14	19	18						
285	6	10	25	27	19	15	10	28	19	18					
289	6	12	12	13	13	13	15	18	18	9	9				
292	13	13	20	20	23	9	15	16	26	12	20	13			
294	14	8	17	10	20	16	9	5	18	13	17	11	23		
297	20	12	30	23	24	22	16	27	24	25	27	16	24	27	
298	4	12	13	11	18	7	14	12	33	12	22	12	28	15	26

Factor Analysis II

1. No. of subjects = 404.

2. Pearson's product-moment method of correlation was used to generate the matrix (see overleaf).

3. Barlett's test for significance of correlation matrix = 2.47, which is significant at .05 level.

4. Communality Estimates

Variable	Communality	Variable	Communality	Variable	Communality	Variable	Communality
4	.342	71	.511	148	.213	227	.345
6	.358	76	.422	153	.400	229	.522
16	.486	89	.537	154	.483	230	.454
17	.401	91	.346	155	.343	236	.515
20	.255	94	.305	157	.527	244	.456
22	.350	98	.289	164	.529	253	.338
25	.375	100	.411	172	.545	255	.427
30	.437	104	.401	176	.365	262	.406
32	.266	105	.491	177	.368	263	.472
40	.466	106	.420	185	.415	272	.364
41	.248	113	.285	187	.423	273	.444
42	.505	116	.563	199	.319	280	.504
45	.314	121	.461	203	.328	282	.338
50	.371	124	.453	207	.310	286	.771
53	.476	127	.314	208	.354	293	.365
54	.351	131	.301	211	.453	296	.592
56	.428	132	.490	215	.458	307	.500
61	.372	134	.334	216	.342		
67	.312	139	.366	221	.515		
68	.382	145	.334	224	.241		

5. Principal factoring method was employed with an iteration procedure to improve the estimates of communality.

6. The Kaiser criterion (ie eigenvalue of at least 1.0) was used for retaining factors following rotation.

7. The Varimax method of rotation was used.

VAR	4	6	16	17	20	22	25	30	32	40	41	42	45	50	53	54	56	61	67	68	71	76	89	91	94	98	100	104	105	106	113	116
6	13																															
16	2	-12																														
17	7	12	-1																													
20	7	-5	-4	13																												
22	5	6	3	0	-4																											
25	13	1	9	11	8	5																										
30	15	5	9	6	6	3	9																									
32	4	6	8	-1	5	26	-3	1																								
40	12	20	-1	16	10	2	0	2	-2																							
41	8	-2	5	-3	12	-1	15	3	0	9																						
42	12	1	11	9	9	2	28	14	2	13	3																					
45	17	6	18	6	3	-3	18	10	3	3	12	6																				
50	9	20	-1	19	8	-5	7	8	-2	7	4	4	7																			
53	10	4	5	5	5	5	16	17	0	18	6	19	4	8																		
54	10	6	6	11	6	1	20	2	3	7	2	27	13	12	14																	
56	13	2	13	8	7	1	11	7	10	3	16	10	16	8	-4	4																
61	12	16	-5	11	6	5	14	6	8	16	8	14	7	9	10	8	13															
67	15	9	7	0	-11	-1	7	8	6	4	4	3	14	8	8	7	8	9														
68	4	-4	15	3	11	4	8	1	5	7	4	8	25	8	-1	19	23	3	-5													
71	21	15	0	16	13	12	13	12	13	11	9	5	12	9	7	8	15	20	6	2												
76	8	11	16	9	6	-2	16	15	-1	9	4	20	15	4	7	18	1	8	8	21	9											
89	11	0	12	5	1	12	21	18	1	7	9	23	14	10	27	19	14	15	13	7	22	16										
91	13	2	12	7	7	6	15	5	4	5	14	19	11	7	14	9	13	9	10	3	20	11	15									
94	12	6	7	16	8	1	5	15	3	20	12	8	6	13	9	9	14	12	13	8	7	1	16	10								
98	8	6	3	8	-4	0	-6	5	9	2	5	1	5	6	-1	1	13	14	3	2	2	-4	4	5	9							
100	-1	4	7	5	1	1	11	5	4	1	5	11	9	12	10	21	13	13	8	13	3	13	12	9	6	-4						
104	28	13	3	16	12	6	13	19	6	19	11	18	8	14	13	12	14	13	-4	8	20	5	6	10	22	-1	1					
105	10	21	-2	16	4	6	1	7	8	18	7	15	2	12	19	7	11	24	2	-2	20	2	2	15	15	3	10	12				
106	12	13	5	8	15	13	19	5	10	20	16	10	10	14	11	-1	10	17	6	-2	15	1	15	17	14	9	1	23	22			
113	8	5	10	7	5	6	9	0	8	3	3	13	3	17	12	14	14	16	16	4	10	11	8	8	6	2	14	10	22	14		
116	1	3	5	9	8	5	9	7	6	8	5	18	6	12	-2	12	6	-3	-5	16	-3	6	-2	7	12	0	20	6	0	12	11	
121	5	5	16	4	-3	0	1	5	-5	-9	9	7	26	6	-4	7	14	3	11	23	0	23	1	4	5	1	19	5	4	-1	14	14
124	5	8	1	5	16	4	18	4	3	-1	11	16	17	4	1	10	21	8	3	11	3	15	14	7	11	-4	25	3	-1	8	9	18
127	16	8	7	20	6	7	9	9	8	13	13	6	9	14	6	15	10	18	1	7	23	9	15	22	19	2	12	21	16	21	7	3
131	9	11	5	2	9	3	13	12	9	11	5	15	8	16	4	-4	9	18	4	-6	18	13	12	8	7	0	3	16	21	12	8	3
132	9	4	17	11	10	4	11	30	9	5	8	8	12	2	15	2	15	5	4	5	13	13	24	9	14	15	-5	6	11	10	10	4
134	10	9	2	8	-10	0	12	7	0	2	4	9	9	16	8	5	9	5	26	2	6	10	9	7	2	13	13	8	4	6	13	14
139	12	19	10	15	9	10	11	16	7	11	11	7	12	13	9	0	12	17	5	0	20	7	9	9	18	11	7	15	20	12	15	12
145	12	2	9	12	4	1	16	6	1	6	6	13	19	6	4	5	15	4	16	8	8	10	5	1	13	5	-4	17	0	11	5	11
148	3	12	9	3	3	5	6	8	9	2	7	10	7	13	6	13	3	10	1	5	10	15	5	3	4	0	12	10	14	6	14	22
153	13	2	13	8	10	0	23	9	-4	10	16	26	15	19	10	18	15	6	14	6	3	6	14	15	12	7	8	17	3	11	11	17
154	17	4	4	4	5	1	6	5	13	9	12	3	5	11	2	8	15	14	5	7	10	1	21	14	19	-2	9	21	9	19	9	13
155	1	0	8	14	13	3	15	0	2	3	13	15	13	8	-1	6	18	17	11	6	10	3	12	11	7	10	8	6	15	10	11	-5
157	15	2	17	1	5	5	16	4	10	9	11	9	29	0	7	14	20	-5	13	18	15	14	16	14	2	-2	13	8	4	3	7	12
164	12	6	-2	9	10	5	25	17	1	14	12	20	12	10	40	19	2	10	4	6	17	15	41	11	11	1	13	14	10	12	4	-5
172	15	4	10	7	4	-2	17	26	-2	7	8	24	1	5	30	16	2	-2	5	3	2	17	30	15	12	1	4	12	13	9	11	7
176	12	9	13	11	3	7	13	11	0	12	9	11	8	4	28	15	9	9	11	0	17	2	20	20	12	-3	10	19	19	16	15	11
177	13	8	8	12	4	-1	15	5	0	5	-4	11	13	12	3	14	13	-1	7	13	-2	11	8	-7	9	7	13	6	1	-3	1	12
185	6	-3	3	5	9	6	14	3	3	2	-2	28	6	1	19	32	3	5	-1	6	-1	12	23	4	-2	-1	12	4	1	0	6	5
187	9	7	8	16	5	5	17	11	10	2	19	9	24	15	6	11	16	10	10	10	10	18	26	12	12	10	11	12	9	11	16	7
199	6	-1	5	0	4	11	11	-2	2	5	2	9	7	-9	-4	6	1	8	9	-3	9	8	11	13	3	-1	1	0	0	2	2	3
203	7	3	-1	8	3	0	4	10	8	7	5	5	6	12	7	3	8	17	14	2	3	1	6	7	12	16	7	4	10	0	2	1
207	14	7	-7	7	-4	-4	15	10	-3	5	6	9	11	15	9	11	14	6	2	9	7	10	20	9	9	2	1	7	6	9	14	6
208	15	2	14	6	9	5	13	8	4	12	14	17	11	9	16	19	19	17	12	10	9	7	7	21	6	2	16	10	5	5	10	11
211	16	7	7	16	1	0	28	-2	1	-2	10	9	13	4	5	8	13	4	5	5	8	11	11	14	9	3	9	2	-7	7	3	5
215	11	6	9	6	10	10	18	4	8	14	16	19	7	-5	7	7	19	13	7	10	2	12	17	23	12	1	0	17	9	19	8	5
216	4	-2	7	7	4	5	11	10	3	8	14	16	11	14	2	15	14	10	9	3	-3	4	4	17	13	5	20	12	4	19	14	13
221	11	4	11	8	9	7	16	16	5	1	-1	18	14	5	23	7	2	5	6	6	19	18	13	18	2	0	12	8	14	7	8	5
224	12	4	5	7	0	4	10	2	2	14	5	14	3	14	6	7	2	11	10	2	10	3	5	18	7	4	6	8	8	16	14	13

VAR	121	124	127	131	132	134	139	145	148	153	154	155	157	164	172	176	177	185	187	199	203	207	208	211	215	216	221	224	227	229	230	236
124	15																															
127	4	5																														
131	11	11	9																													
132	12	11	9	9																												
134	17	6	3	11	13																											
139	3	8	10	14	19	17																										
145	21	6	0	7	11	13	17																									
148	11	3	9	6	5	12	6	10																								
153	2	19	11	6	13	8	21	17	11																							
154	-6	11	15	8	12	6	0	-3	6	10																						
155	3	16	11	12	16	11	17	3	3	13	8																					
157	23	11	6	9	6	11	12	17	9	14	1	11																				
164	5	11	3	13	24	8	8	2	1	15	13	7	6																			
172	5	13	10	5	17	8	6	9	0	12	7	2	11	27																		
176	4	11	11	9	12	11	17	10	5	25	5	13	14	29	28																	
177	18	9	-4	7	7	3	0	14	3	15	1	5	11	2	12	4																
185	4	19	8	3	11	-1	1	0	3	10	14	7	7	23	18	10	19															
187	22	17	11	14	21	14	18	17	9	18	15	13	20	19	11	15	19	12														
199	9	3	5	-1	17	0	4	3	11	6	4	13	17	2	13	12	1	3	14													
203	-1	0	7	13	8	13	9	0	3	1	14	16	3	7	-3	7	2	8	6	2												
207	4	18	13	1	25	12	6	5	5	17	13	8	10	18	16	15	17	9	20	6	14											
208	8	21	9	16	11	8	8	6	11	14	13	12	12	13	9	15	-1	17	11	14	14	7										
211	7	22	12	9	18	2	14	13	2	20	10	19	11	19	15	13	9	17	20	11	8	18	21									
215	7	17	12	16	26	5	12	14	5	20	21	16	9	14	15	12	7	19	23	21	8	6	19	19								
216	11	11	17	3	4	10	11	5	11	20	12	13	13	7	10	6	10	10	19	5	13	7	14	15	10							
221	22	9	6	15	15	5	14	17	6	13	-1	19	37	21	21	24	13	22	18	19	2	9	22	8	19	8						
224	-1	1	7	6	9	16	20	8	13	20	10	18	6	6	8	21	-1	9	13	7	10	6	7	16	16	12	5					
227	14	26	8	9	10	15	8	4	11	15	16	17	15	15	18	10	8	13	20	10	11	7	21	14	11	16	14	5				
229	11	10	7	2	13	16	10	9	18	10	13	12	8	19	20	20	1	12	19	12	17	10	14	3	16	20	15	17	21			
230	-1	11	18	18	4	6	19	3	5	27	14	16	17	13	10	21	13	12	21	10	8	11	18	14	20	8	21	19	8	9		
236	3	11	9	0	18	5	14	7	5	12	3	2	7	25	48	29	11	15	14	7	2	8	15	17	8	5	19	9	19	18	14	
244	2	19	11	11	17	12	11	8	8	16	26	13	0	13	15	18	7	12	17	14	11	17	16	10	29	9	14	8	15	11	16	16
253	10	27	12	9	22	10	16	4	7	14	18	22	6	13	15	13	9	12	14	3	13	13	20	6	16	12	17	11	20	18	14	16
255	10	24	5	8	20	12	7	9	10	16	17	16	4	26	34	17	8	27	18	12	0	15	22	23	22	18	24	9	23	22	9	33
262	5	16	16	4	18	6	20	12	13	20	16	21	11	7	3	11	4	13	12	19	8	6	17	17	24	17	11	19	17	10	26	10
263	14	5	5	7	8	-2	9	8	-3	6	9	13	4	-1	-3	8	1	4	2	3	-1	1	13	4	14	2	26	8	6	5	13	7
272	0	4	13	1	14	10	11	0	-3	14	17	13	12	11	0	2	0	14	11	8	18	7	10	5	17	1	14	13	4	10	16	3
273	24	27	16	9	19	13	8	13	10	21	15	23	32	21	19	15	16	19	20	16	15	18	22	16	19	17	28	4	25	19	10	21
280	5	13	18	7	22	5	21	11	8	13	6	7	4	20	24	24	7	8	11	6	14	20	5	8	16	11	13	6	1	10	16	15
282	8	3	4	8	0	-3	11	15	-11	4	4	10	11	2	3	1	9	1	7	4	-10	-4	7	2	5	10	19	2	10	4	12	1
286	10	33	7	9	6	6	15	5	11	9	7	21	12	7	12	7	-2	9	21	-2	16	8	19	15	15	17	19	8	26	18	6	18
293	5	11	14	7	17	4	11	6	14	15	14	15	10	18	13	17	8	11	17	9	15	12	25	13	12	14	11	12	7	20	9	17
296	11	16	15	9	7	9	13	8	9	28	16	19	13	14	21	16	3	9	11	18	9	8	25	10	23	22	17	12	19	18	28	17
307	18	12	7	8	13	2	3	14	7	6	-1	21	31	9	1	6	8	-1	15	15	12	10	16	9	13	9	28	3	16	6	14	12

VAR	244	253	255	262	263	272	273	280	282	286	293	296
253	29											
255	23	18										
262	21	20	14									
263	8	11	14	9								
272	9	12	6	19	1							
273	15	20	27	27	19	9						
280	15	15	12	15	8	2	20					
282	-1	12	6	9	19	3	13	-2				
286	19	28	19	15	6	7	20	13	2			
293	12	11	18	14	-6	14	19	14	-7	10		
296	25	15	29	18	10	5	25	23	10	15	21	
307	0	10	13	14	26	8	29	4	16	19	8	9

VAR	4	6	16	17	20	22	25	30	32	40	41	42	45	50	53	54	56	61	67	68	71	76	89	91	94	98	100	104	105	106	113	116
227	0	-1	13	9	-1	1	17	6	3	5	5	15	12	7	14	18	21	10	8	12	7	10	14	18	9	5	31	1	13	6	9	8
229	5	-2	-3	16	7	10	14	22	-8	7	5	20	3	7	24	10	5	14	12	4	5	2	11	14	12	0	15	9	19	4	22	13
230	26	14	8	11	5	5	9	2	3	17	13	12	16	5	10	4	16	17	9	0	24	2	15	19	7	5	-2	26	17	14	10	-3
236	8	11	13	12	-1	9	21	16	-4	7	6	13	9	13	30	6	0	5	5	2	10	19	22	17	7	4	9	11	18	18	9	6
244	5	8	1	17	5	6	4	6	3	10	8	16	-2	11	12	14	12	10	10	11	7	9	10	17	8	11	12	13	7	14	9	24
253	7	-4	11	10	8	1	12	6	7	8	7	8	11	9	8	18	20	12	7	16	13	10	25	5	11	3	17	9	17	15	14	11
255	9	10	7	13	7	0	22	23	0	14	10	28	12	6	20	19	13	7	10	11	13	21	25	17	6	3	19	7	9	13	8	13
262	14	0	16	9	5	10	14	3	7	6	10	13	14	-3	2	10	17	18	7	11	6	3	17	22	17	8	10	3	7	8	14	15
263	0	3	7	3	7	1	-1	4	4	-1	8	4	1	0	6	-4	-2	9	7	3	4	1	0	15	9	-3	4	1	8	2	3	-5
272	16	5	12	1	0	12	8	4	14	6	7	0	2	4	10	3	15	12	10	5	10	-9	6	2	4	11	-8	10	4	6	13	-7
273	10	-1	15	15	10	8	21	8	-3	0	14	22	25	5	14	19	12	15	9	23	10	21	24	14	6	-1	21	10	3	6	10	16
280	23	4	1	3	3	11	2	21	3	9	17	7	10	4	16	3	14	15	6	8	21	7	15	15	17	6	2	19	14	9	8	6
282	-4	-3	12	3	2	6	3	-4	7	1	8	6	12	4	-2	2	9	-2	-3	2	5	-4	1	4	4	5	4	-2	-3	0	-1	-3
286	3	5	-2	12	4	14	9	15	4	9	3	10	13	13	9	3	16	-2	3	9	-4	10	8	8	15	0	18	14	14	3	14	11
293	13	9	6	15	16	9	10	15	4	18	12	12	2	15	11	16	12	12	3	15	18	8	12	7	8	4	13	14	12	12	10	12
296	18	1	5	7	2	7	9	10	2	17	14	22	9	11	9	14	8	7	11	16	15	18	12	19	13	11	16	21	5	6	10	6
307	8	6	7	2	6	4	12	-2	6	0	10	5	25	-5	-4	-2	8	-2	14	6	14	7	9	13	7	7	2	7	6	9	6	-5

Factor Analysis III

1. No. of subjects = 404

2. Pearson's product-moment method of correlation used to generate the matrix (see overleaf).

3. Bartlett's test for significance of correlation matrix = 8.20, which is significant at .01 level.

4. Communality Estimates

Variable	Communality	Variable	Communality	Variable	Communality	Variable	Communality
1	.411	74	.278	174	.280	249	.503
2	.363	77	.378	191	.377	251	.412
3	.387	83	.482	194	.366	256	.386
7	.276	84	.327	195	.429	257	.452
14	.304	87	.306	196	.501	259	.366
31	.424	95	.529	201	.383	260	.342
33	.277	99	.361	202	.265	264	.442
35	.407	103	.547	204	.534	267	.503
37	.251	108	.394	206	.481	268	.420
38	.409	109	.267	212	.231	275	.511
39	.567	136	.357	217	.258	279	.422
49	.240	138	.516	219	.385	295	.454
52	.261	141	.628	224	.277	299	.328
60	.331	149	.438	225	.362	301	.248
62	.465	166	.534	231	.337		
66	.438	170	.336	232	.379		
69	.421	171	.697	234	.462		
70	.504	173	.323	235	.348		

5. Principal factoring method was employed with an iteration procedure to improve the estimates of communality.

6. The Kaiser criterion (ie eigenvalue of at least 1.0) was used for retaining factors following rotation.

7. The Varimax method of rotiation was used.

VAR	1	2	3	7	14	31	33	35	37	38	39	49	52	60	62	66	69	70	74	77	83	84	87	95	99	103	108	109	136	138	141	149
2	14																															
3	5	0																														
7	7	8	-3																													
14	11	16	8	7																												
31	10	5	6	14	15																											
33	7	6	7	5	2	7																										
35	8	8	-6	14	6	11	17																									
37	-2	4	10	-1	6	7	5	4																								
38	9	8	-2	5	11	5	5	26	-4																							
39	-9	14	24	8	1	7	4	-7	2	4																						
49	9	3	11	4	5	5	2	7	3	11	6																					
52	11	12	10	11	11	0	10	9	7	6	15	7																				
60	-1	4	0	8	14	2	-4	2	0	19	9	9	17																			
62	-7	6	-3	6	9	9	23	19	4	10	6	10	4	7																		
66	8	21	-1	7	17	14	6	6	4	10	-4	4	8	12	18																	
69	6	2	3	13	6	13	17	28	5	13	3	18	13	13	23	14																
70	2	16	5	10	13	13	6	5	11	8	6	3	11	3	10	-2	4															
74	6	-5	14	1	9	6	9	14	1	11	10	13	7	11	13	4	17	2														
77	1	8	16	8	4	12	9	2	5	4	16	6	9	6	6	2	13	5	13													
83	11	7	15	6	4	8	15	5	16	-4	6	26	6	3	17	13	12	-1	14	17												
84	4	10	11	8	9	13	1	16	9	22	10	8	14	20	8	8	15	5	8	0	7											
87	11	7	11	13	5	15	9	11	-1	9	15	10	3	4	17	10	12	4	8	21	17	7										
95	0	19	13	19	8	17	-1	4	1	4	12	8	14	12	4	15	15	19	4	12	9	11	19									
99	6	8	6	11	6	13	7	4	3	4	17	13	11	2	11	7	17	-5	10	15	18	7	20	16								
103	8	6	13	2	-1	13	6	1	10	11	16	24	10	8	4	6	10	2	8	15	37	9	16	18	6							
108	11	10	-8	0	13	12	3	2	-1	1	2	3	5	14	8	10	4	5	13	-7	11	17	1	4	-1	11						
109	10	6	-2	12	3	15	12	9	1	7	4	15	6	8	13	9	16	3	5	17	14	6	18	21	10	18	8					
136	10	8	7	10	12	10	5	12	3	1	2	3	14	4	14	7	13	28	6	7	3	7	1	17	1	-1	7	4				
138	15	12	15	13	10	20	-2	6	-1	7	12	11	8	14	-9	5	6	-1	8	15	11	3	10	30	17	17	9	7	16			
141	17	4	2	11	4	13	17	14	1	8	-3	9	14	5	14	23	4	7	10	0	13	13	16	12	4	23	13	20	11	4		
149	3	9	5	-9	10	10	17	7	11	6	13	5	11	11	17	15	16	-3	10	1	8	14	15	9	10	9	10	18	7	13	12	
166	1	7	8	9	11	9	14	16	0	5	8	-1	14	-2	4	10	10	-6	9	15	12	6	11	13	24	15	3	0	9	13	15	14
170	10	8	8	1	7	10	10	8	23	2	-2	7	7	12	16	10	10	6	9	19	23	6	7	8	17	16	9	5	10	12	5	3
171	11	10	16	11	17	12	9	12	1	11	16	16	7	11	10	11	10	4	15	7	15	9	19	10	16	22	6	24	7	17	22	21
173	1	7	26	4	10	8	-2	-1	8	3	22	11	8	13	1	0	7	2	6	15	15	7	13	21	11	16	7	10	14	31	4	10
174	7	8	0	7	7	16	6	1	2	8	-3	9	6	13	-3	5	12	1	7	3	12	13	7	10	12	5	16	16	2	5	7	11
191	12	22	9	17	14	17	-1	7	-6	7	17	3	7	7	7	7	10	14	14	16	7	12	10	24	10	12	14	12	22	29	2	9
194	1	13	10	4	2	0	6	-2	1	-1	18	1	7	8	-5	7	0	4	3	7	-1	3	-7	4	-5	5	9	5	8	9	1	0
195	6	11	20	8	3	11	-3	-5	1	4	24	15	9	13	-2	4	2	8	5	8	12	6	13	13	14	28	3	-2	10	21	21	13
196	12	12	22	17	7	10	5	11	3	0	25	11	15	14	3	7	14	-2	8	21	20	5	24	26	19	15	4	13	21	29	15	15
201	6	4	13	4	1	2	4	5	9	-4	15	9	10	-4	0	-1	5	0	4	19	19	5	16	13	8	20	1	13	15	13	11	7
202	12	5	0	16	11	16	7	19	-3	12	3	7	14	8	11	17	8	5	9	3	7	10	6	14	18	4	14	10	19	7	15	6
204	11	9	27	5	4	9	6	-3	2	0	28	12	11	7	-7	3	11	3	1	18	15	8	11	10	11	17	-8	1	13	20	10	16
206	5	6	6	10	4	14	22	18	6	6	10	4	8	2	14	10	25	0	15	7	14	16	15	11	7	13	7	12	12	11	13	20
212	1	10	-3	10	14	8	9	9	-7	9	2	-3	13	10	16	21	14	5	3	9	7	19	8	11	13	9	4	12	12	3	13	11
217	4	6	8	12	4	20	10	7	-5	7	8	-2	6	8	9	8	13	4	1	8	2	11	8	12	7	8	4	11	22	16	13	18
219	16	8	-2	-1	9	0	14	8	-1	-2	-3	9	14	4	10	16	6	2	13	2	19	1	12	-1	10	11	8	7	13	12	24	17
224	10	14	8	7	7	9	9	2	7	-2	-5	4	13	6	1	-1	3	6	5	5	3	16	5	8	6	3	22	1	13	2	5	9
225	-6	2	5	9	9	4	5	4	5	-6	2	-2	3	10	1	1	6	-9	-2	16	15	-4	-1	6	0	14	-3	4	8	10	14	3
231	7	8	26	10	2	19	3	-1	4	3	24	16	7	11	6	5	9	5	5	23	22	10	13	19	9	19	3	15	17	23	13	6
232	-1	6	5	-3	-3	2	26	19	-1	5	6	2	13	0	22	6	11	5	11	14	11	7	21	3	14	5	-1	10	1	4	9	20
234	0	7	29	4	3	6	2	-6	11	7	27	7	7	16	-4	-2	8	6	6	15	15	9	12	20	10	15	4	8	15	21	3	14
235	17	5	8	6	5	12	12	12	6	6	2	11	5	6	17	11	11	2	7	4	16	22	15	5	7	13	8	14	6	9	23	13
249	13	5	3	11	18	15	17	7	-2	4	4	9	9	6	12	5	7	3	21	27	20	-5	7	9	16	15	13	16	12	26	17	12
251	0	1	-5	4	9	5	16	11	-1	3	-3	10	-2	-4	26	11	9	1	10	13	20	-4	21	-2	5	5	1	7	5	-4	10	4
256	7	12	1	7	9	13	1	-1	-2	1	6	4	10	13	2	7	7	8	9	4	-1	16	10	4	6	5	14	10	17	8	9	14
257	7	10	11	7	6	8	12	12	-1	14	0	13	8	7	16	12	8	11	13	15	15	9	15	22	7	18	5	13	19	24	8	12
259	2	2	18	6	3	5	17	16	9	7	12	6	8	7	14	4	12	-1	14	2	9	12	9	7	7	7	8	4	15	14	13	11
260	10	11	4	3	10	10	15	8	7	0	7	17	5	2	5	10	6	-3	1	20	12	7	22	19	20	9	4	12	6	17	10	19

VAR	1	2	3	7	14	31	33	35	37	38	39	49	52	60	62	66	69	70	74	77	83	84	87	95	99	103	108	109	136	138	141	149
264	8	6	-6	15	14	14	-1	9	5	9	-3	4	12	13	5	13	17	7	8	6	1	11	3	16	3	8	9	8	15	20	3	3
267	7	11	7	10	11	23	24	18	5	8	6	1	13	11	22	20	15	6	13	7	14	15	8	4	15	17	12	15	9	15	25	16
268	8	-4	18	-7	4	5	10	9	7	7	7	5	4	-3	16	7	9	-3	14	5	6	7	21	1	9	-4	0	11	10	9	4	14
275	11	5	12	-3	-9	5	13	1	2	5	7	0	6	-3	15	14	7	-3	3	12	14	3	16	7	18	4	-3	10	-1	2	20	8
279	6	0	-1	13	10	13	9	11	10	18	6	8	6	13	5	-2	10	1	10	-2	2	20	12	2	10	10	18	11	6	11	1	2
295	10	15	13	5	0	12	8	3	0	6	21	6	12	11	0	12	9	2	12	22	10	0	9	20	25	23	3	5	11	33	17	17
299	9	-5	9	-1	7	17	16	13	7	7	8	9	8	5	18	13	8	-1	14	9	10	6	15	0	16	0	13	20	12	3	25	15
301	-2	2	11	6	12	14	6	8	0	4	7	7	3	10	5	5	9	9	4	9	3	14	11	11	3	15	4	9	11	7	10	11

VAR	166	170	171	173	174	191	194	195	196	201	202	204	206	212	217	219	224	225	231	232	234	235	249	251	256	257	259	260	264	267	268	275
170	4																															
171	20	4																														
173	4	13	10																													
174	14	4	14	6																												
191	13	3	17	17	3																											
194	8	-2	1	11	1	14																										
195	23	13	19	19	10	17	8																									
196	16	7	12	30	2	17	4	23																								
201	8	1	17	18	-1	18	-1	19	31																							
202	6	5	11	3	15	11	-2	3	17	12																						
204	19	6	18	23	6	13	9	37	33	17	2																					
206	22	11	11	2	3	21	10	8	17	19	13	10																				
212	17	8	16	-2	8	13	6	8	10	8	14	7	14																			
217	18	5	20	6	12	18	11	8	13	5	17	16	18	16																		
219	26	16	15	10	3	8	-2	15	11	6	2	16	10	15	4																	
224	10	7	7	6	16	9	12	4	5	0	9	5	6	11	9	9																
225	8	9	8	11	7	4	17	13	14	12	2	10	9	13	4	7	6															
231	-1	14	11	23	5	20	13	20	28	26	5	22	14	4	7	0	6	11														
232	12	13	11	9	8	9	2	-4	7	0	11	-1	21	16	5	17	7	12	9													
234	14	10	17	33	4	19	15	42	31	18	8	41	12	2	11	7	12	8	25	9												
235	4	9	26	6	16	14	9	1	12	17	17	3	23	10	21	10	16	7	12	19	5											
249	23	25	17	18	17	18	6	15	17	16	15	4	21	16	15	26	12	15	15	16	6	6										
251	9	3	6	-1	-3	7	0	0	10	7	12	5	12	8	10	20	5	18	5	15	-3	5	21									
256	8	-4	6	4	11	21	-4	6	14	10	18	2	18	11	14	14	12	2	5	8	5	14	14	7								
257	15	14	6	11	4	20	8	9	22	10	11	15	13	10	16	12	8	8	13	14	18	19	18	17	14							
259	18	8	17	4	5	15	0	11	23	4	15	17	31	10	13	10	8	9	10	15	22	20	15	13	8	18						
260	14	10	14	12	15	11	9	8	19	7	13	9	19	8	11	13	13	9	21	17	12	16	24	15	9	13	8					
264	4	9	16	13	12	22	9	7	5	-3	13	6	15	11	11	8	11	8	7	0	8	9	10	-1	25	19	15	-3				
267	13	15	18	3	1	8	8	2	6	8	20	-2	15	18	21	18	13	12	10	23	4	27	19	7	16	25	15	11	17			
268	2	1	25	5	3	11	-1	3	10	20	16	10	18	2	11	9	9	-1	13	10	10	21	10	5	18	17	23	15	2	12		
275	5	5	14	9	-1	1	6	2	8	-1	0	5	14	0	10	1	5	-5	13	18	10	19	12	0	0	2	10	22	7	10	19	
279	4	13	11	4	12	15	-1	-1	14	9	22	1	14	17	10	7	12	-4	5	9	7	7	12	7	12	5	22	12	19	11	12	7
295	31	5	24	24	3	19	-2	24	29	9	8	19	12	9	13	19	0	6	15	19	18	4	25	3	14	26	15	13	11	12	7	5
299	12	11	15	11	7	15	7	8	13	8	10	9	17	10	11	21	8	10	11	15	9	24	16	9	8	19	15	20	2	23	27	22
301	2	8	14	7	7	19	4	5	17	12	10	6	20	11	9	1	3	13	18	9	8	15	5	2	13	18	19	14	10	22	15	6

VAR	279	295	299
295	1		
299	16	13	
301	16	11	18

Factor Analysis IV

1. No. of subjects = 404

2. Pearson's product-moment method of correlation used to generate the matrix (see overleaf).

3. Bartlett's test for significance of correlation matrix = 6.95, which is significant at .01 level.

4. Communality Estimates

Variable	Communality	Variable	Communality	Variable	Communality	Variable	Communality
11	.181	129	.424	214	.290	306	.385
12	.279	146	.388	222	.341	307	.284
15	.219	147	.398	223	.386	309	.542
19	.190	150	.498	225	.463		
26	.160	151	.429	238	.383		
29	.337	156	.432	239	.242		
44	.346	159	.474	242	.397		
47	.252	162	.437	243	.354		
48	.404	178	.598	246	.402		
57	.474	180	.346	274	.373		
80	.199	182	.390	281	.518		
82	.460	183	.474	288	.406		
102	.423	184	.379	290	.507		
107	.394	186	.570	291	.465		
110	.450	189	.336	302	.337		
114	.294	193	.360	303	.254		
115	.321	203	.252	304	.285		
120	.437	208	.573	305	.579		

5. Principal factoring method was employed with an iteration procedure to improve the estimates of communality.

6. The Kaiser criterion (ie eigenvalue of at least 1.0) was used for retaining factors following rotation.

7. The Varimax method of rotation was used.

VAR	11	12	15	19	26	29	44	47	48	57	80	82	102	107	110	114	115	120	129	146	147	150	151	156	159	162	178	180	182	183	184	186
12	6																															
15	7	11																														
19	1	6	5																													
26	11	10	2	-1																												
29	-5	15	6	6	9																											
44	8	5	5	-4	7	-7																										
47	9	7	7	-1	0	4	9																									
48	-7	12	16	8	9	13	8	9																								
57	-2	2	7	5	6	10	5	-3	5																							
80	8	11	12	12	2	12	6	8	10	6																						
82	-1	6	8	0	11	19	6	18	21	4	4																					
102	5	16	14	14	6	11	5	5	10	8	10	8																				
107	14	7	20	7	3	9	13	6	9	5	15	12	23																			
110	6	10	10	10	8	23	7	10	11	25	10	25	17	8																		
114	3	7	-2	2	-2	6	-6	6	-5	12	-3	-2	1	-6	28																	
115	11	5	11	0	9	14	13	20	1	7	11	15	10	19	15	4																
120	5	15	12	5	1	8	11	21	5	-3	10	12	11	24	6	-3	17															
129	10	12	3	1	7	-2	20	11	7	7	-4	-7	18	22	9	1	0	20														
146	5	14	9	5	14	13	2	10	10	3	10	7	21	24	3	-6	8	15	11													
147	7	25	5	4	6	9	9	11	1	13	6	7	17	7	14	6	9	26	8	15												
150	1	3	5	18	3	14	-10	10	10	-4	7	14	16	-6	22	9	5	1	-12	8	15											
151	1	6	1	7	12	16	9	11	16	12	6	20	14	1	31	8	7	-2	5	4	10	26										
156	-2	13	11	4	3	4	5	12	13	12	9	20	19	21	13	-4	16	16	8	6	10	9	12									
159	4	19	8	3	13	27	7	-4	11	13	9	14	11	6	19	4	18	9	3	5	26	24	23	12								
162	10	4	9	0	11	-1	27	9	12	4	5	7	21	19	4	-5	7	19	40	8	8	-6	5	12	12							
178	1	3	9	4	5	-6	35	9	24	8	3	15	12	10	8	-10	5	13	20	8	2	-4	4	22	1	33						
180	10	7	8	0	4	7	14	7	6	4	24	3	14	16	6	3	10	13	8	22	11	4	11	14	8	8	9					
182	6	6	12	8	11	12	17	18	9	12	7	23	18	21	13	2	16	14	10	21	8	11	16	23	19	14	23	16				
183	0	4	10	5	8	24	2	11	9	8	8	26	15	9	20	9	13	7	0	8	10	26	23	14	21	2	5	6	23			
184	8	4	11	-2	12	1	16	22	9	4	5	15	12	20	10	-1	17	21	16	19	8	3	16	7	-2	19	20	19	21	-1		
186	-2	10	7	8	10	27	4	7	15	1	12	19	10	2	27	5	4	5	-6	6	11	36	31	8	16	-3	-10	9	8	37	1	
189	12	7	8	8	8	12	3	7	-3	24	17	13	16	17	17	8	23	13	4	19	7	10	11	3	16	6	3	8	9	9	14	11
193	7	7	11	0	7	-8	21	10	3	13	5	1	24	18	8	-9	5	15	21	6	8	-1	14	13	2	27	27	7	19	4	14	0
203	2	11	7	1	5	3	12	5	5	-4	14	8	13	16	4	5	8	11	3	2	7	3	5	7	8	7	9	15	4	10	15	8
208	14	16	8	6	6	16	10	7	2	13	9	10	16	16	13	1	16	22	9	12	16	20	18	26	13	16	9	11	12	13	9	25
214	7	7	1	4	2	2	12	12	5	-10	10	1	11	13	2	-4	10	23	14	10	11	2	10	24	6	15	17	16	16	3	12	4
222	8	11	2	2	18	17	1	-3	4	5	6	3	11	-5	4	2	7	-4	7	7	17	7	7	0	23	12	-4	-1	6	8	0	9
223	-2	2	11	1	4	7	0	-6	6	12	2	-2	-2	5	14	0	7	-3	6	1	3	1	6	15	13	3	-2	-1	8	5	6	1
225	-3	12	-10	-4	11	14	2	9	3	1	1	4	-6	4	1	4	8	7	2	3	12	11	13	-2	10	-7	-1	4	1	16	1	7
238	6	7	15	12	9	10	11	14	16	6	9	10	19	19	15	3	11	21	18	10	8	6	13	18	3	18	20	6	13	10	13	13
239	1	7	14	2	-2	10	9	8	12	4	11	16	9	20	10	-3	12	10	4	18	16	5	8	6	8	4	-1	19	11	12	10	10
242	7	17	13	13	7	20	15	14	29	10	5	24	23	7	23	3	9	14	5	13	22	15	27	11	14	14	14	14	22	15	17	23
243	6	16	5	-7	6	19	10	15	15	6	14	17	17	9	12	5	15	6	-2	14	22	22	18	8	20	2	6	23	16	18	6	21
246	-2	12	-3	-2	12	10	7	10	17	5	10	21	17	12	15	3	8	7	2	17	17	13	20	17	21	14	10	5	19	22	7	21
274	4	10	3	5	8	20	-2	6	10	9	2	9	7	1	13	11	4	4	5	11	20	15	13	5	21	-1	-5	17	12	12	6	17
281	10	14	1	4	7	17	6	7	6	17	8	6	10	4	13	13	1	2	10	17	15	20	22	14	17	-2	2	3	15	14	3	15
288	9	16	12	10	8	17	7	6	5	5	10	12	22	17	19	-2	17	16	11	12	12	13	11	18	14	19	10	14	18	10	21	6
290	3	12	9	19	1	19	8	4	0	1	8	-4	1	9	1	-9	12	21	5	7	8	6	6	14	18	6	6	9	7	14	-1	12
291	13	2	15	11	5	5	6	4	7	-3	14	-5	16	23	-4	-10	17	14	11	15	12	10	11	5	18	18	13	19	1	0	12	0
302	7	3	5	-1	6	15	8	11	13	12	15	19	11	12	17	5	8	10	11	1	16	11	26	17	17	9	12	24	20	16	22	17
303	1	5	-6	4	8	5	11	7	-1	2	-4	7	13	9	9	-1	6	1	11	-2	11	0	15	8	10	12	6	3	10	4	5	3
304	0	6	11	8	10	20	0	-2	6	3	11	13	13	4	9	8	7	1	-4	0	7	20	14	15	15	2	5	1	3	27	2	18
305	8	14	8	7	19	14	1	9	8	7	13	7	10	16	20	9	18	13	3	18	18	22	12	10	27	8	2	8	21	13	11	19
306	15	7	6	4	15	17	7	0	6	-1	4	2	10	18	-2	3	11	7	10	15	13	9	3	11	13	6	-7	7	10	15	5	6
307	3	6	-4	1	5	20	-12	2	-7	4	6	2	8	19	4	8	6	-3	-1	3	10	7	0	7	16	-1	-12	9	-1	11	1	9
309	10	17	11	2	10	5	13	11	9	-8	14	13	22	23	6	-13	20	14	12	18	4	3	14	15	18	21	8	11	16	-1	12	-2

VAR	189	193	203	208	214	222	223	225	238	239	242	243	246	274	281	288	290	291	302	303	304	305	306	307
193	6																							
203	10	0																						
208	12	14	14																					
214	5	5	17	9																				
222	5	3	5	12	-2																			
223	-2	1	0	18	-1	11																		
225	8	-3	-3	-2	0	15	7																	
238	15	17	-1	19	17	-3	6	8																
239	11	0	14	14	9	7	13	8	1															
242	10	9	11	5	10	8	2	12	23	15														
243	10	2	8	14	11	12	2	12	2	18	13													
246	9	6	11	16	9	19	14	8	13	11	11	21												
274	8	-9	-1	11	3	23	7	12	15	10	15	15	12											
281	14	-5	11	10	14	15	9	11	15	7	21	18	15	14										
288	19	20	9	13	14	8	8	0	7	16	24	5	8	-2	9									
290	5	1	4	12	15	6	9	16	15	6	8	-2	-1	5	21	16								
291	8	13	12	15	12	7	2	3	12	21	9	6	0	7	2	11	12							
302	14	13	16	11	15	13	7	7	8	16	23	15	14	21	14	6	6	11						
303	5	-3	-6	12	2	22	6	9	5	0	5	4	9	19	10	7	14	9	11					
304	11	2	1	15	5	14	5	11	0	8	12	9	8	10	16	13	14	13	8	7				
305	15	2	9	17	16	20	13	8	19	18	15	20	38	18	20	12	15	10	21	6	14			
306	6	6	4	12	8	17	2	5	11	13	13	6	6	15	24	15	21	14	3	13	11	2		
307	10	-6	13	16	8	9	14	9	3	10	4	19	6	10	8	6	10	7	11	10	19	14	15	
309	13	19	16	8	12	10	7	10	21	16	19	2	14	3	10	24	16	23	14	12	3	12	10	3

Factor Analysis V

1. No. of subjects = 404

2. Pearson's product-moment method of correlation used to generate the matrix (see overleaf).

3. Bartlett's test for significance of correlation matrix = 10.91, which is significant at .01 level.

4. Communality Estimates

Variable	Communality	Variable	Communality	Variable	Communality	Variable	Communality
5	.320	98	.284	167	.356	252	.333
10	.437	100	.482	169	.282	261	.419
27	.399	109	.360	175	.255	270	.330
28	.190	119	.201	176	.283	273	.418
30	.256	124	.341	177	.149	278	.515
34	.374	132	.380	192	.392	307	.422
45	.313	134	.175	197	.374		
53	.425	135	.404	203	.351		
56	.335	140	.408	208	.422		
58	.499	142	.428	216	.291		
73	.390	143	.340	221	.452		
81	.332	157	.456	227	.316		
88	.539	158	.597	236	.413		
89	.321	160	.261	245	.324		
93	.309	161	.382	247	.350		
97	.292	165	.463	250	.298		

5. Principal factoring method was employed with an iteration procedure to improve the estimates of communality.

6. The Kaiser criterion (ie eigenvalue of at least 1.0) was used for retaining factors following rotation.

7. The Varimax method of rotation was used.

VAR	5	10	27	28	30	34	45	53	56	58	73	81	88	89	93	97	98	100	109	119	124	132	134	135	140	142	143	157	158	160	161	165
10	31																															
27	25	22																														
28	12	13	9																													
30	0	1	11	5																												
34	20	30	18	14	10																											
45	2	4	5	0	9	3																										
53	4	8	12	6	17	7	3																									
56	9	15	14	6	7	8	16	-3																								
58	27	26	36	13	7	25	-3	10	11																							
73	14	20	13	5	6	16	-7	4	17	13																						
81	13	21	27	4	5	10	2	2	10	26	12																					
88	11	15	8	1	8	11	12	3	12	16	23	27																				
89	15	12	3	9	18	7	14	28	14	6	10	5	13																			
93	16	9	4	10	3	7	6	1	19	9	13	9	13	14																		
97	11	10	16	14	11	13	10	5	24	18	9	13	5	14	21																	
98	7	9	6	8	5	12	5	-1	13	17	7	3	-1	5	2	15																
100	11	13	12	0	5	5	9	9	13	11	14	6	-2	11	10	-5	-4															
109	14	11	19	-1	3	9	7	-1	10	10	6	16	7	8	20	14	-2	12														
119	11	13	9	14	7	12	7	2	11	14	9	13	9	9	14	19	12	4	3													
124	3	12	5	7	4	9	17	1	22	4	11	5	0	14	11	13	-4	25	5	8												
132	6	6	9	2	29	8	12	15	15	7	13	5	3	24	8	17	15	-5	11	8	11											
134	8	11	6	0	8	8	9	9	8	10	10	8	9	10	5	5	14	13	3	9	6	13										
135	17	19	10	18	2	26	6	6	20	19	30	10	10	12	12	11	14	0	5	18	10	8	15									
140	14	10	18	15	6	11	0	13	14	26	18	14	5	5	21	16	7	4	14	15	14	9	9	21								
142	19	29	24	12	4	20	-1	0	13	31	25	24	18	8	11	10	7	4	14	19	4	13	7	30	21							
143	21	14	21	13	3	12	11	2	13	25	21	18	10	11	19	17	8	7	24	16	8	17	12	17	32	20						
157	-6	6	9	4	4	5	28	7	20	6	11	2	8	16	4	10	-3	13	17	6	11	6	10	5	6	7	5					
158	-2	10	7	7	22	25	6	19	10	14	15	15	11	20	10	19	-6	14	16	8	22	9	10	10	15	11	13	11				
160	7	4	8	9	8	8	10	0	22	12	21	4	10	6	11	13	11	16	21	15	19	8	13	16	17	15	18	8	14			
161	12	11	15	19	7	10	4	-3	20	25	13	7	4	14	20	27	20	10	18	21	19	22	13	17	26	20	26	0	10	17		
165	19	21	17	5	4	21	2	2	9	23	13	35	30	7	7	10	0	-2	16	19	3	11	7	15	20	26	18	2	12	5	17	
167	20	26	11	9	8	20	-1	4	6	9	23	8	8	11	6	12	14	9	3	19	3	5	13	33	14	16	16	-1	7	14	15	0
169	10	17	7	11	11	15	2	7	9	11	21	15	21	12	16	12	2	5	9	15	9	15	9	24	16	21	21	9	16	11	11	29
175	15	15	12	5	8	15	3	7	15	24	12	15	16	13	5	16	3	4	4	17	9	15	16	21	20	25	22	8	18	16	13	19
176	10	9	5	4	11	15	8	28	9	10	15	5	12	20	12	10	-3	10	17	14	11	12	11	14	18	9	8	14	21	4	6	12
177	-6	3	1	1	4	-3	13	3	13	-2	9	2	-1	7	3	9	6	13	-1	-2	9	7	3	9	4	3	7	11	5	11	7	0
192	10	22	8	15	0	21	11	5	19	13	20	0	2	14	24	20	0	15	13	14	22	13	11	14	11	14	23	15	24	17	23	7
197	4	4	13	-1	8	8	5	5	3	11	16	12	5	12	17	8	8	9	5	5	11	6	14	6	18	3	20	0	19	5	16	3
203	12	4	2	3	9	7	6	6	8	17	5	12	1	5	5	7	15	7	10	13	0	8	12	8	3	12	14	3	6	9	16	14
208	9	12	9	8	8	18	11	16	19	11	17	-1	12	7	16	11	2	16	7	11	21	11	8	15	14	6	10	12	16	14	13	9
216	2	4	13	7	9	9	11	2	14	14	-1	8	4	4	2	18	5	20	10	13	11	4	9	-1	13	7	10	13	19	16	12	11
221	0	1	4	-9	15	11	14	23	3	8	14	3	11	13	3	6	-1	12	6	7	9	15	5	10	6	6	1	38	23	7	3	7
227	12	19	3	3	7	8	12	14	21	9	11	5	1	14	17	9	6	31	15	5	26	10	15	7	7	4	15	15	16	11	7	7
236	-4	2	4	4	16	16	9	30	0	0	4	-2	-1	22	5	5	4	9	5	5	10	18	6	-1	4	-10	-1	7	34	1	1	2
245	14	9	5	14	-2	9	5	5	12	11	9	6	17	11	4	13	9	10	9	18	5	7	8	9	12	7	21	5	8	17	20	20
247	8	13	13	7	9	12	9	2	18	19	18	21	13	12	20	17	8	8	24	17	2	8	6	15	10	34	18	17	14	20	19	14
250	10	6	1	23	1	10	1	-4	6	11	6	-2	6	7	16	12	7	0	2	14	10	7	4	21	19	10	12	3	5	15	16	7
252	2	3	4	1	11	2	14	15	9	5	2	8	9	4	13	5	-2	16	8	15	14	7	18	8	13	9	12	9	17	8	0	11
261	20	28	9	12	0	16	-2	-4	8	11	20	16	11	5	8	10	-2	4	4	15	8	10	9	22	16	23	16	4	1	13	13	25
270	10	9	8	2	-5	7	4	-6	23	11	10	7	9	5	21	19	10	15	18	12	9	6	3	11	6	16	10	15	1	21	23	8
273	0	2	7	-1	8	10	25	13	12	-1	13	5	5	24	8	10	-2	21	9	10	27	19	12	12	4	4	5	32	15	7	8	9
278	17	19	18	13	6	21	10	8	11	14	17	15	7	10	18	15	9	2	22	16	5	16	4	15	31	14	29	9	12	17	21	15
307	-4	1	-4	-3	-2	10	25	-4	8	1	2	-1	14	9	3	7	7	2	2	-2	12	13	2	2	0	7	2	31	7	8	6	7

VAR	167	169	175	176	177	192	197	203	208	216	221	227	236	245	247	250	252	261	270	273	278
169	13																				
175	12	13																			
176	5	11	15																		
177	0	9	12	4																	
192	13	2	15	10	4																
197	12	2	16	10	2	10															
203	3	9	9	7	2	-4	9														
208	13	8	12	15	-1	9	16	14													
216	1	10	15	6	10	8	6	13	14												
221	4	16	17	24	13	6	6	3	22	8											
227	7	11	10	10	8	18	13	10	21	16	13										
236	4	8	10	29	11	17	16	2	15	5	19	19									
245	6	15	14	15	5	7	10	12	15	14	15	8	7								
247	9	18	16	8	6	15	3	19	6	3	17	7	2	17							
250	14	5	13	11	10	22	4	6	2	0	2	4	9	18	14						
252	3	11	17	19	8	15	14	2	20	9	14	14	14	12	10	5					
261	23	27	14	9	0	13	8	0	17	11	3	14	1	22	16	17	11				
270	15	10	7	1	12	11	-3	12	6	12	13	12	-4	15	18	15	-2	13			
273	5	15	13	15	16	11	12	15	22	17	28	25	21	8	16	2	11	12	20		
278	18	16	6	14	-3	20	23	13	27	9	16	14	15	18	21	12	17	24	11	15	
307	-2	13	5	6	9	6	6	13	16	9	28	16	12	2	10	2	14	5	7	29	16

Factor Analysis VI

1. No. of subjects = 404

2. Pearson's product-moment method of correlation used to generate the matrix (see overleaf).

3. Bartlett's test for significance of correlation matrix = 10.93, which is significant at .01 level.

4. Communality Estimates

Variable	Communality	Variable	Communality	Variable	Communality	Variable	Communality
3	.375	107	.391	189	.333	302	.448
14	.203	108	.247	193	.424	303	.317
19	.203	110	.374	195	.463	307	.289
33	.265	120	.326	196	.394		
35	.334	129	.404	203	.350		
38	.434	146	.479	204	.446		
39	.339	150	.352	206	.307		
44	.390	151	.425	222	.446		
49	.318	159	.687	224	.264		
57	.331	162	.316	234	.521		
60	.198	166	.363	239	.231		
62	.366	171	.322	260	.386		
69	.298	174	.374	274	.470		
80	.351	178	.288	279	.243		
83	.515	180	.428	288	.251		
84	.510	183	.333	290	.378		
103	.464	186	.424	295	.416		

5. Principal factoring method was employed with an iteration procedure to improve the estimates of communality.

6. The Kaiser criterion (ie eigenvalue of at least 1.0) was used for retaining factors following rotation.

7. The Varimax method of rotation was used.

VAR	3	14	19	33	35	38	39	44	49	57	60	62	69	80	83	84	103	107	108	110	120	129	146	150	151	159	162	166	171	174	178	180
14	8																															
19	1	3																														
33	8	3	5																													
35	-7	6	11	17																												
38	-2	11	9	5	26																											
39	24	1	3	4	-8	5																										
44	7	2	-4	-8	-8	9	11																									
49	11	5	6	1	7	11	5	1																								
57	0	5	5	12	4	12	10	5	7																							
60	0	14	10	-4	2	19	9	8	9	6																						
62	-4	8	15	22	20	9	6	-21	10	8	7																					
69	3	6	16	17	28	14	4	-6	18	15	13	23																				
80	2	10	12	-5	8	18	-1	6	5	6	5	11	18																			
83	15	4	-1	15	6	-5	6	-5	26	-4	3	18	12	9																		
84	11	9	-1	2	15	23	10	13	7	4	20	7	15	11	6																	
103	14	-1	-2	7	1	11	16	10	24	3	8	3	10	7	37	9																
107	9	11	7	10	8	15	15	13	4	5	13	4	15	15	-1	17	12															
108	-8	12	2	3	2	1	2	13	3	-5	14	8	4	4	11	17	11	14														
110	8	10	10	12	6	5	9	7	13	25	3	20	18	10	18	1	7	8	8													
120	6	11	5	5	7	11	7	11	16	-3	14	-1	10	10	13	15	15	24	17	6												
129	8	13	1	3	-4	-5	6	20	7	7	11	-12	2	-4	0	10	5	22	22	9	20											
146	5	21	5	4	8	4	7	2	17	3	13	4	12	10	13	12	15	24	15	3	15	11										
150	3	-3	18	13	10	7	4	-10	15	-4	8	19	10	7	21	-3	13	-6	-2	22	1	-12	8									
151	4	0	7	9	9	6	16	9	7	12	5	23	14	6	25	13	15	1	2	31	-2	5	4	26								
159	10	1	3	11	15	6	5	7	16	13	7	12	12	9	13	-1	12	6	4	19	9	3	5	24	23							
162	12	9	0	1	-6	10	5	27	6	4	8	-11	2	5	-5	12	9	19	20	4	19	40	8	-6	5	12						
166	9	11	2	14	15	5	8	-6	-1	15	-2	4	10	15	11	6	15	12	3	19	6	-2	2	14	21	30	-3					
171	16	17	7	9	12	11	16	13	16	11	11	10	10	18	15	9	22	14	6	16	20	8	15	16	24	20	16	20				
174	0	7	10	6	1	8	-3	1	9	17	13	-3	12	15	12	13	5	7	16	9	14	18	18	4	7	14	19	14	14			
178	3	6	4	-2	-10	6	4	35	-2	8	9	-13	-4	3	5	15	12	10	20	8	13	20	8	-4	4	1	33	1	16	10		
180	10	16	0	1	12	7	5	14	9	4	7	1	8	24	3	25	14	16	8	6	13	8	22	4	11	8	8	18	18	14	9	
183	6	1	5	12	14	12	11	2	7	8	11	19	17	8	15	5	13	9	3	20	7	0	8	26	23	21	2	7	21	9	5	6
186	12	7	8	16	13	3	15	4	15	1	15	19	22	12	16	10	12	2	7	27	5	-6	6	34	31	16	-3	12	18	0	-10	9
189	2	1	8	9	5	3	11	3	16	24	6	15	16	17	9	2	6	17	5	17	13	4	19	10	11	16	6	16	13	15	3	8
193	5	7	0	-6	-7	3	14	21	0	13	7	-7	3	5	-2	9	15	18	22	8	15	21	6	-1	14	2	27	4	14	14	27	7
195	20	3	-2	-3	-5	4	24	8	15	6	13	-2	2	2	12	6	28	16	3	0	6	8	14	11	2	16	13	23	19	10	11	9
196	22	7	7	5	11	0	25	1	11	8	14	3	14	5	20	5	15	15	4	13	14	1	18	19	10	28	11	16	12	2	4	6
203	4	10	1	7	8	8	6	12	8	-4	17	9	9	14	3	11	3	16	11	4	11	3	2	3	5	8	7	11	14	2	9	15
204	27	4	8	6	-3	0	28	0	12	1	7	-7	11	4	15	8	17	0	-8	10	8	1	10	10	4	18	8	19	18	6	1	8
206	6	4	5	22	18	6	10	-4	4	6	2	14	25	13	14	16	13	18	7	16	8	3	13	23	19	15	-1	22	11	3	-1	13
222	17	6	2	7	5	4	14	1	2	5	3	9	9	6	12	1	10	-5	3	4	-4	7	7	7	7	23	12	10	13	7	-4	-1
224	8	7	6	9	2	-2	-5	7	4	4	6	1	3	1	3	16	3	11	22	15	9	12	8	0	13	13	14	10	7	16	11	12
234	29	3	-1	2	-6	7	27	8	7	5	16	-4	8	-2	15	9	15	13	4	8	11	1	14	16	3	14	9	14	17	4	12	8
239	-2	13	2	8	10	3	5	9	7	4	11	9	8	11	5	21	10	20	19	10	10	4	18	5	8	8	4	7	11	11	-1	19
260	4	10	-4	15	8	0	7	4	17	10	2	5	6	2	12	7	9	14	4	29	11	6	15	14	4	20	11	14	14	15	7	11
274	1	8	5	22	6	6	15	-2	10	9	1	11	6	2	6	1	9	1	7	13	4	5	11	15	13	21	-1	17	16	9	-5	17
279	-1	10	2	9	11	18	6	12	8	5	13	5	10	21	2	20	10	20	18	4	10	13	11	3	6	2	17	4	11	12	18	18
288	2	7	10	6	6	5	7	7	5	5	3	1	4	10	8	17	10	17	15	19	16	11	12	13	11	14	19	4	14	19	10	14
290	10	6	19	6	11	0	1	8	6	1	9	2	6	8	4	2	14	9	2	1	21	5	7	6	6	18	6	11	10	6	6	9
295	13	0	5	8	3	6	21	4	6	11	11	0	9	3	10	0	23	7	3	14	2	7	17	16	7	25	7	31	24	3	5	11
302	-1	5	-1	19	11	9	-2	8	1	12	7	14	13	15	11	18	10	12	0	17	10	11	1	11	26	17	9	20	20	11	12	24
303	9	3	4	8	-1	-6	10	11	-5	2	7	5	4	-4	-1	5	8	9	-3	9	1	11	-2	0	15	10	12	10	3	-7	6	3
307	8	3	1	14	5	0	7	-12	4	4	2	12	10	6	9	0	14	10	-5	4	-3	-1	3	7	0	16	-1	27	6	-1	-12	9

VAR	183	186	189	193	195	196	203	204	206	222	224	234	239	260	274	279	288	290	295	302	303
186	37																				
189	9	11																			
193	4	0	6																		
195	10	5	14	17																	
196	16	12	12	10	23																
203	10	8	10	0	5	-4															
204	21	13	10	0	37	33	0														
206	16	20	16	3	8	17	8	10													
222	8	9	5	3	14	19	5	16	15												
224	1	11	14	11	4	5	9	5	6	1											
234	15	12	1	17	42	31	4	41	12	20	12										
239	12	10	11	0	4	10	14	4	14	7	12	7									
260	11	13	15	5	8	19	5	9	19	6	13	12	9								
274	12	17	8	-9	21	18	-1	17	15	23	3	13	10	11							
279	11	7	3	12	-1	14	15	1	14	6	12	7	22	12	5						
288	10	6	19	20	1	12	9	5	7	8	15	5	16	11	-2	17					
290	14	12	5	1	11	16	4	14	8	6	16	12	6	7	5	18	16				
295	5	9	17	-2	24	29	5	19	12	21	0	18	6	13	22	1	15	11			
302	16	17	14	13	-3	8	16	1	25	13	9	9	16	27	21	14	6	6	8		
303	4	3	5	-3	9	11	-6	10	12	22	2	4	0	7	19	1	7	14	20	11	
307	11	9	10	-6	15	14	13	23	22	9	3	21	10	4	10	8	6	10	19	11	10

Factor Analysis VII

1. No. of subjects = 404

2. Pearson's product-moment method of correlation used to generate the matrix (see overleaf).

3. Bartlett's test for significance of correlation matrix = 16.77, which is significant at .01

4. Communality Estimates

Variable	Communality	Variable	Communality	Variable	Communality	Variable	Communality
3	.251	97	.282	161	.297	208	.269
27	.417	100	.450	162	.436	221	.429
28	.222	110	.269	176	.277	227	.294
30	.211	121	.365	178	.472	234	.581
39	.369	124	.295	183	.472	236	.409
44	.319	129	.318	186	.481	250	.252
45	.329	140	.250	187	.280	273	.358
53	.491	142	.309	192	.310	307	.372
56	.275	150	.320	193	.250		
58	.390	151	.385	195	.392		
81	.279	157	.424	196	.406		
89	.448	158	.373	204	.407		

5. Principal factoring method was employed with an iteration procedure to improve the estimates of communality.

6. The Kaiser criterion (ie eigenvalue of at least 1.0) was used for retaining factors following rotation.

7. The Varimax method of rotation was used.

VAR	3	27	28	30	39	44	45	53	56	58	81	89	97	100	110	121	124	129	140	142	150	151	157	158	161	162	176	178	183	186	187	192
27	-2																															
28	6	9																														
30	-2	11	5																													
39	24	-2	7	2																												
44	7	1	5	13	11																											
45	13	5	0	9	16	-10																										
53	3	12	6	17	13	5	3																									
56	18	14	6	7	11	3	16	-3																								
58	1	36	13	7	-7	8	-3	10	11																							
81	-13	27	4	5	-2	5	2	2	10	26																						
89	10	3	9	18	14	12	14	28	14	6	5																					
97	9	16	14	11	3	6	10	5	24	18	13	14																				
100	11	12	0	5	21	9	9	9	13	11	6	11	-5																			
110	8	19	4	2	9	7	11	7	17	11	10	14	20	8																		
121	7	-1	-3	4	21	3	27	-5	14	-5	-8	0	7	19	10																	
124	17	5	7	4	23	6	17	1	22	4	6	14	13	25	4	15																
129	8	5	12	10	6	20	1	7	5	19	14	12	6	14	9	-2	3															
140	6	18	15	6	-2	10	0	13	14	26	24	5	16	4	13	-3	14	22														
142	-3	24	12	4	-7	3	-1	0	13	31	5	8	10	4	6	-2	4	9	21													
150	3	5	3	7	4	-10	8	5	17	10	9	14	20	7	22	9	12	-12	4	1												
151	4	3	6	5	16	9	9	0	5	11	2	6	18	6	31	20	9	5	12	7	26											
157	4	9	4	4	19	-10	28	7	20	6	15	16	10	13	8	23	11	-1	6	7	2	5										
158	9	7	7	22	7	14	6	19	10	14	0	20	19	14	6	7	22	10	15	11	11	14	11									
161	12	15	19	7	12	16	4	-3	20	25	7	14	27	10	20	6	19	15	26	20	7	16	0	10								
162	12	12	15	4	5	27	-3	2	11	17	4	6	7	18	4	-2	12	40	22	7	-6	5	7	16	18							
176	-1	5	4	11	0	9	8	28	9	10	5	20	10	10	15	4	11	9	18	9	3	18	14	21	6	11						
178	3	13	7	-5	4	35	-7	5	-2	19	12	10	8	18	8	-2	11	20	18	21	-4	4	-2	4	14	33	12					
183	6	0	-9	-3	11	2	-4	4	19	5	8	17	17	3	20	9	13	0	10	8	26	23	5	4	15	2	20	5				
186	12	2	1	6	15	4	8	9	20	7	11	9	12	8	27	1	15	-6	6	2	36	31	1	11	8	-3	13	-10	37			
187	10	6	-2	11	11	2	27	6	16	8	7	26	10	11	18	22	17	8	16	7	13	14	20	21	13	14	15	9	9	10		
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273	16	7	-1	8	25	5	25	13	12	-1	5	24	10	21	17	24	27	6	4	4	12	17	32	15	8	4	15	6	20	12	20	11
307	8	-4	-3	-2	7	-12	25	-4	8	1	-1	9	7	2	4	19	12	-1	0	7	7	0	31	7	6	-1	6	-12	11	9	15	6

VAR	193	195	196	204	208	221	227	234	236	250	273
195	17										
196	10	23									
204	0	37	33								
208	14	17	17	17							
221	7	13	20	12	22						
227	9	22	28	20	21	13					
234	17	42	31	41	19	12	20				
236	15	12	25	11	15	19	19	19			
250	17	8	7	4	2	2	4	11	9		
273	6	25	24	24	22	28	25	26	21	2	
307	-6	15	14	23	16	28	16	21	12	2	29

APPENDIX D

THE MAIN STUDY QUESTIONNAIRE

QUESTIONNAIRE BOOKLET

I am currently undertaking a research study into attitudes about work, and the way people might behave, feel and act at work. Your responses along with many more individuals are to be the data upon which my study is based. Your completed questionnaire will be held in the strictest confidence. As all the questionnaires are anonymous, it will be impossible for any individual to be identified from the data.

The task I am asking you to perform is quite a long one, but I would appreciate greatly any assistance that you can afford to give me.

RICHARD FORD

Directions: Where appropriate please indicate your answer by circling the relevant number.

* Age last birthday .....

* Sex: (1) Male (2) Female

* Marital Status: (1) Married (2) Single (3) Divorced (4) Widowed

* Dependents: (1) None (2) One (3) Two (4) Three (5) Four or over

* Education History:

Please circle your highest qualification only

(1) Higher degree or degree

(2) Higher National Certificate or Diploma

(3) GCE 'A' level, SCE 'H' level, Teachers' Certificate, Membership of a Professional institute, full or intermediate professional qualifications, SRN.

(4) Ordinary National Certificate or Diploma.

(5) GCE 'O' level, SCE 'O' level, General School Certificate, City and Guilds Trade Certificate, Forces Educational Certificates, Commercial or Trade Certificates/diplomas.

(6) Apprenticeship completed.

(7) No qualification obtained.

(8) Other, please specify .....

* Work status: (1) employed (2) unemployed (3) receiving invalidity benefit

* Father's Occupation:

If known, please state your father's occupation below. Please be specific about the job title, and please indicate the highest position held.

_____

_____

_____

* Work History:

Please start by listing your present or last job and work backwards. Please be specific about job titles, indicating position held, and please try to be specific about the reason for leaving each job. Remember that your answers will be strictly confidential.

JOB TITLE	NAME OF BUSINESS OR ORGANISATION OR FIRM	FROM_____ TO_____	REASON(S) FOR LEAVING JOB

INSTRUCTIONS:

Here are some questions about the way you might behave, feel and act at work. After each question you are asked to consider whether that behaviour or feeling applies or does not apply to you. There are 3 possible answers to each question. Try to decide whether "Yes/True" or "No/False" or "in between" represents your usual way of acting or feeling in that particular situation. Please indicate your answer by circling the appropriate response.

Work quickly and do not spend too much time over any item but be sure to answer every question. There are no "right" or "wrong" answers because everyone behaves, feels and acts differently. Finally, remember that you are only asked to comment about how you behave, feel and act at work.

1. I like mixing with other people at work.
   a. Yes b. In between c. No

2. My advice to people is to be cautious - take time and think things over.
   a. True b. In between c. False

3. I have had some quarrels with people at work.
   a. Yes b. In between c. No

4. I am casual
   a. Yes

5. I usually f roup.
   a. Yes

6. I like to o
   a. Yes

7. My future a
   a. True

8. I believe t
   a. Yes

9. I believe t
   respected.
   a. Yes

10. I sometimes
    a. True

11. I can take
    a. Yes

12. I often fe ork.
    a. Yes

13. I believe better.
    a. Yes

14. There is a
    lucky bre
    a. True

15. At work I ul.
    a. Yes

16. I believe
    responsib
    a. Yes

17. Once in a
    a. True

18. My mood a
    a. True

19. Starting her
    difficult for me.
    a. True b. In between c. False

20. I like doing jobs in which I have to act quickly.
    a. Yes b. In between c. No

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1. I like mixing with other people at work.
   a. Yes b. In between c. No

2. My advice to people is to be cautious - take time and think things over.
   a. True b. In between c. False

3. I have had some quarrels with people at work.
   a. Yes b. In between c. No

4. I am casually calm and not easily upset at work.
   a. Yes b. In between c. No

5. I usually feel uncomfortable when having to mix with a new group.
   a. Yes b. In between c. No

6. I like to organise people at work.
   a. Yes b. In between c. No

7. My future at work looks very dismal.
   a. True b. In between c. False

8. I believe that I am quite popular at work.
   a. Yes b. In between c. No

9. I believe that to work effectively bosses must be obeyed and respected.
   a. Yes b. In between c. No

10. I sometimes get cross at work.
    a. True b. In between c. False

11. I can take kidding or teasing at work without getting upset.
    a. Yes b. In between c. No

12. I often feel self-conscious when talking to supervisors at work.
    a. Yes b. In between c. No

13. I believe that I have the ability to inspire people to work better.
    a. Yes b. In between c. No

14. There is little chance for promotion in my job unless I get a lucky break.
    a. True b. In between c. False

15. At work I usually make an effort to keep other people cheerful.
    a. Yes b. In between c. No

16. I believe that there are 2 kinds of people at work: the responsible and the irresponsible.
    a. Yes b. In between c. No

17. Once in a while at work I lose my temper and get angry.
    a. True b. In between c. No

18. My mood at work does not often go up and down.
    a. True b. In between c. No

19. Starting conversations with strangers at work is usually rather difficult for me.
    a. True b. In between c. False

20. I like doing jobs in which I have to act quickly.
    a. Yes b. In between c. No

21. It seems to me that most people in positions of authority are not really interested in the problems of the average man.
a. True b. In between c. False

22. I believe that my manner at work is friendly.
a. Yes b. In between c. No

23. I believe that there is only one correct way of running things at work.
a. Yes b. In between c. No

24. I have been or nearly been in a fight at work.
a. True b. In between c. False

25. I don't often feel "fed up" at work.
a. True b. In between c. False

26. I am slow to trust people at work.
a. True b. In between c. False

27. I would rather work with several people under me than in a team.
a. True b. In between c. False

28. I believe that the situation of the average man is getting worse, not better.
a. Yes b. In between c. No

29. I appear to have many friends at work.
a. Yes b. In between c. No

30. I believe that rules must be followed strictly if work is to be efficient.
a. Yes b. In between c. No

31. I have sometimes told lies to people at work.
a. Yes b. In between c. No

32. I rarely get annoyed in company.
a. True b. In between c. False

33. I am easily embarrassed when people watch me work.
a. Yes b. In between c. No

34. I enjoy having responsibility at work.
a. Yes b. In between c. No

35. I often feel listless and tired at work for no good reason.
a. Yes b. In between c. No

Occupational Beliefs Index:

Instructions:

The statements on this page represent beliefs which people may have in or about work. Some beliefs are very important to some people, but of little importance to others. Please read each statement carefully and then indicate how important the statement is to you by ticking a box next to one of the following 5 responses:

☐ Strongly agree ☐ agree ☐ undecided ☐ disagree ☐ Strongly disagree

A.

1. Life, without work, is rather pointless and a waste of time.

☐ strongly agree ☐ agree ☐ undecided ☐ disagree ☐ strongly disagree

2. I work in order to provide myself with a good living.

☐ strongly agree ☐ agree ☐ undecided ☐ disagree ☐ strongly disagree

3. I work in order to meet people and make friends.

☐ strongly agree ☐ agree ☐ undecided ☐ disagree ☐ strongly disagree

4. I work because I get satisfaction from my work.

☐ strongly agree ☐ agree ☐ undecided ☐ disagree ☐ strongly disagree

5. My work gives me status socially.

☐ strongly agree ☐ agree ☐ undecided ☐ disagree ☐ strongly disagree

6. I feel that I ought to work for the general good of society.

☐ strongly agree ☐ agree ☐ undecided ☐ disagree ☐ strongly disagree

7. I enjoy exercising authority at work.

☐ strongly agree ☐ agree ☐ undecided ☐ disagree ☐ strongly disagree

8. The ordinary working man's life is better in the UK than in most other countries.

☐ strongly agree ☐ agree ☐ undecided ☐ disagree ☐ strongly disagree

9. Work provides my life with a necessary routine.

☐ strongly agree ☐ agree ☐ undecided ☐ disagree ☐ strongly disagree

10. My work gives me the chance to get on in life.

☐ strongly agree ☐ agree ☐ undecided ☐ disagree ☐ strongly disagree

11. I work because it permit me to give service to others.

☐ strongly agree ☐ agree ☐ undecided ☐ disagree ☐ strongly disagree

12. My work brings me self respect.

☐ strongly agree ☐ agree ☐ undecided ☐ disagree ☐ strongly disagree

Now please go back and look at the statements with which you "strongly agree". If you "strongly agree" with at least 3 statements, please rank the 3 (and only 3) most important statements to you in order of importance by writing next to these 3 boxes.

1. for the most important
2. for the second in importance
3. for the third in importance

If you do not "strongly agree" with any statements, please look at the statements with which you "agree". If you "agree" with at least 3 statements, please rank the 3 (and only 3) most important statements to you in order of importance by writing next to these 3 boxes.

1. for the most important
2. for the second in importance
3. for the third in importance

B. Please indicate which one of the following statements is true for you by ticking the box before the statement.

☐ My working life used to be better

☐ My working life is as good now as it ever was or probably ever will be

☐ I expect my future working life to get better

C. There are 2 possible answers to each question below. Please indicate your answer by ticking the appropriate box.

1. If you were out of work, which would you rather do?

☐ Claim unemployment benefit

☐ Take an unskilled job that paid the same as unemployment benefit.

2. If by some chance you had enough money to live comfortably without working, do you think that you would work anyway, or would you not work?

☐ Would not work

☐ Would work anyway

3. What kind of work would you rather have?

☐ Average pay from work that is looked down on by the people you know

☐ Low pay from work that is respected by the people you know.

4. Is the most important thing about getting a promotion

☐ Getting more pay

☐ Getting more respect from friends and neighbours

5. Which job would you choose if you could be sure of keeping either job?

☐ Better than average pay as an unskilled worker

☐ Less than average pay as a manager

6. If you could be sure that your income would go up steadily without getting a promotion, would you care about being promoted?

☐ Yes

☐ No

Some people are completely involved in their job - they are absorbed in it night and day. For other people, their job is simply one of several interests. How involved do you feel in your present job or did you feel in your last job. Please tick <u>one</u> box below.

1. ☐ Very little involved; my other interests are more absorbing.

2. ☐ Slightly involved.

3. ☐ Moderately involved; my job and my other interests are equally absorbing to me.

4. ☐ Strongly involved.

5. ☐ Very strongly involved; my work is the most absorbing interest in my life.

Please specify the job you have been referring to .....

THAT IS THE END OF THE QUESTIONNAIRE. THANK YOU VERY MUCH FOR YOUR HELP.

APPENDIX E

THE MAIN STUDY CODEBOOK

CODEBOOK

COLUMN	ITEM	CODES
1, 2, 3	Identification	As on questionnaire
4	Card Sequence Number	1 or 2
5	Sex	1. Male 2. Female 3. Not Ascertained
6, 7	Age in Years	Code exact number 99 Not Ascertained
8	Marital Status	1. Married 2. Single 3. Divorced 4. Widowed
9	Dependants	1. None 2. One 3. Two 4. Three 5. Four or over
10	Educational History	1. Higher degree or degree 2. HND or diploma 3. 'A' level, 'H' level, Teacher's certificate, membership of a professional institute, full or intermediate professional qualifications, SRN 4. OND or diploma 5. 'O' level, GSE, C&G, Forces Educational Certificates, Commercial or Trade Certificates/ diplomas 6. Apprenticeship completed 7. No qualification obtained 8. Other
11	Work Status	1. Employed 2. Unemployed 3. Receiving invalidity benefit

COLUMN	ITEM	CODES
12	Father's Occupation	1. Professional or Senior Management 2. Minor Professional, Technical or Line Management 3. Commercial and Personal Services 4 Craft or Skilled

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6. Further education/training
7. Pregnancy
8. Family move/spouse's transfer

COLUMN	ITEM	CODES
19, 20 (Contd)	Reason for leaving first job	9. Redundant 10. Too far to travel 11. Not enough job satisfaction 12. Work too hard (physically/ mentally) 13. Better prospects elsewhere 14. Temporary job finished 15. Poor working conditions 16. Return to school 17. Commence apprenticeship 18. Apathy 19. Lack of job security 20. Marriage 21. Dislike of work organization 22. Shift work/unsatisfactory hours 23. Disagreement 24. Health 25. Domestic/Personal reasons 26. National Service 99 Not Ascertained/Not Applicable
21, 22	Reason for leaving second job	" " " "
23, 24	Reason for leaving third job	" " " "
25, 26	Reason for leaving fourth job	" " " "
27,28	Reason for leaving fifth job	" " " "
29, 30	Reason for leaving sixth job	" " " "
31, 32	Reason for leaving seventh job	" " " "

COLUMN	ITEM	CODES
33, 34	Reason for leaving eighth job	" " " "
35, 36	Reason for leaving ninth job	" " " "
37, 38	Reason for leaving tenth job	" " " "
39-73	Questionnaire Nos 1-35	2 Yes/True 0 No/False 1 In Between 3 Not Ascertained
74	Existential Work-Orientation	5 Strongly agree 4 Agree 3 Undecided 2 Disagree 1 Strongly agree
75	Economic W-O	" "
76	Affiliative W-O	" "
77	Self-Fulfilling W-O	" "
78	Socially Esteemed W-O	" "
79	Socially Obligated W-O	" "
80	Power W-O	" "

COLUMN	ITEM	CODES
Card 2		
5	Political W-O	" "
6	Security W-O	" "
7	Achievement W-O	" "
8	Altruistic W-O	" "
9	Self-Identity W-O	" "
10, 11	First Ranked W-O	1. Existential 2. Economic 3. Affiliative 4. Self-Fulfilling 5. Socially Esteemed 6. Socially Obligated 7. Power 8. Political 9. Security 10. Achievement 11. Altruistic 12. Self-Identity 99 Not Ascertained
12, 13	Second Ranked W-O	" "
14, 15	Third Ranked W-O	" "
16	Time-Perspective W-O	1. Oriented in the past 2. Oriented in the present 3. Oriented in the future
17, 18	Work Orientation Index	Code exact index score

COLUMN	ITEM	CODES
19-24	Quest C1 to Quest C6	2 Positive orientation to work 0 Negative orientation to work 1 Not Ascertained
25, 26	Meaning of Work Index	Code exact index score
27	Overall Job Involvement	5. Very strongly involved 4. Strongly involved 3. Moderately involved 2. Slightly involved 1. Very little involved

APPENDIX F

THE MAIN STUDY FACTOR ANALYSES - TECHNICAL DETAILS

Main Study Factor Analysis of OBI Items

1. No of subjects = 422

2. Pearson's product-moment method of correlation was used to generate the matrix. (see overleaf)

3. Communality Estimates:

Variable	Communality
1	.29
2	.21
3	.27
4	.32
5	.30
6	.33
7	.17
8	.09
9	.27
10	.38
11	.37
12	.39

4. Principal factoring method was employed with an iteration procedure to improve the estimates of communality.

5. The Kaiser criterion (ie eigenvalue of at least 1.0) was used for retaining factors following rotation.

6. The Varimax method of rotation was used.

Pearson Product-Moment Correlation Matrix

Work Orientations	1	2	3	4	5	6	7	8	9	10	11	12
1. Existential												
2. Economic	19											
3. Affiliative	30	15										
4. Self-Fulfilling	29	02	35									
5. Socially-Esteemed	12	27	26	26								
6. Socially-Obligated	28	00	16	29	28							
7. Power	02	12	07	27	29	15						
8. Political	-05	-06	-08	16	13	09	18					
9. Security	39	11	25	13	15	31	05	-01				
10. Achievement	29	32	32	28	39	28	23	00	34			
11. Altruistic	29	-08	33	39	21	49	12	07	27	23		
12. Self-Identity	35	23	28	33	36	36	17	-01	37	50	32	

Main Study Factor Analysis of OPSCI and OBI Items

1. No of subjects = 422

2. Pearson's product-moment method of correlation was used to generate the matrix. (see overleaf)

3. Communality Estimates

Variable	Communality	Variable	Communality
Q1	.312	Q25	.330
Q2	.293	Q26	.217
Q3	.445	Q27	.328
Q4	.314	Q28	.349
Q5	.451	Q29	.355
Q6	.501	Q30	.438
Q7	.365	Q31	.272
Q8	.359	Q32	.290
Q9	.347	Q33	.392
Q10	.374	Q34	.349
Q11	.213	Q35	.333
Q12	.407	W01	.373
Q13	.434	W02	.314
Q14	.308	W03	.421
Q15	.299	W04	.468
Q16	.342	W05	.381
Q17	.403	W06	.391
Q18	.235	W07	.466
Q19	.447	W08	.202
Q20	.210	W09	.342
Q21	.295	W010	.467
Q22	.274	W011	.424
Q23	.381	W012	.462
Q24	.274		

4. Principal factoring method was employed with an iteration procedure to improve the estimates of communality.

5. The Kaiser criterion (ie eigenvalue of at least 1.0) was used for retaining factors following rotation.

6. The Varimax method of rotation was used.

VAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
2	4																															
3	5	1																														
4	6	4	-7																													
5	-16	7	15	-23																												
6	3	-14	18	9	-17																											
7	1	4	9	-6	5	-12																										
8	10	-1	6	12	-12	25	-14																									
9	-4	10	-14	3	-4	-5	9	8																								
10	7	-4	34	-18	18	9	1	4	-13																							
11	14	-1	-6	10	-23	-3	-5	15	7	-4																						
12	-2	10	4	-22	32	-23	18	-19	15	1	-19																					
13	0	4	11	6	-18	59	-14	32	5	-3	3	-18																				
14	-9	6	-2	-9	-1	-14	48	-7	-9	-9	-6	13	-12																			
15	25	10	3	1	-13	13	5	29	10	-2	8	-5	26	-2																		
16	-9	29	9	-8	-2	-13	10	-3	14	-3	8	14	-9	19	10																	
17	-3	-3	44	-16	10	8	8	-9	-15	46	-3	0	-4	4	-4	7																
18	-3	-2	-11	30	-14	3	3	6	7	-8	17	-14	6	-3	9	1	-10															
19	-19	3	0	-9	53	-22	16	-19	-9	2	-21	35	-25	9	-17	3	9	-10														
20	12	-14	9	9	-15	15	-3	10	9	4	15	-14	19	2	10	2	-3	11	-21													
21	-3	8	10	9	4	-5	20	-9	-10	7	9	15	-9	27	2	28	14	-9	14	4												
22	27	10	-1	5	-13	4	-6	19	5	4	16	-3	15	-12	29	0	-2	2	-18	12	-11											
23	5	25	9	10	-10	-11	19	-9	25	-12	11	6	-9	12	8	33	-1	16	-1	1	11	0										
24	-4	4	38	-7	7	-3	10	-11	-12	18	-6	12	-1	3	-8	9	26	-13	8	-6	16	-3	4									
25	9	-2	-6	29	-24	21	-18	12	15	-14	20	-15	23	-19	14	-8	-14	27	-24	13	-12	8	6	-10								
26	-21	6	11	-9	21	3	10	-3	1	11	-11	15	-1	14	-9	14	5	-9	18	-2	18	-21	-1	16	-17							
27	-13	5	14	10	3	39	-1	7	9	5	-4	-6	26	-1	1	6	2	-1	-6	4	6	-3	9	5	5	15						
28	8	14	7	-6	-3	-13	34	-1	3	-6	3	10	-15	22	10	26	6	-3	-1	0	27	3	27	7	-16	2	-11					
29	26	8	9	6	-23	11	-10	44	7	1	10	-12	15	-6	20	1	-5	9	-17	14	-4	27	9	-4	12	-15	-10	12				
30	-3	25	-7	9	-5	-10	13	-1	43	-10	6	11	-7	9	8	34	-6	8	2	2	-3	-7	44	-3	0	-1	2	15	3			
31	-9	-1	39	-4	21	2	9	-1	-20	20	-5	4	3	2	0	-2	24	-9	15	-7	4	-5	-11	31	-7	14	2	-1	1	-15		
32	-1	11	-14	31	-13	-3	-15	13	17	-20	16	-16	11	-11	8	-4	-25	23	-9	3	-5	12	-3	-12	24	-9	8	-10	13	1	-5	
33	-1	5	-4	-17	34	-29	17	-23	-3	2	-17	40	-26	13	-5	9	-1	-13	40	-15	12	-6	-1	7	-26	13	-11	11	-13	5	3	-14
34	17	1	11	15	-12	36	-14	23	-1	8	5	-16	34	-8	11	-8	-3	7	-16	23	-5	19	-12	-7	10	-6	23	-3	15	-10	5	0
35	-11	4	5	-27	24	-17	33	-17	-5	14	-23	27	-23	17	-8	8	11	-16	26	-6	15	-8	-5	15	-33	14	-10	9	-11	-4	9	-22
36	4	21	7	8	-6	9	9	1	23	-12	-3	15	1	-3	9	22	-3	2	-1	-8	8	9	24	-3	7	-4	-4	21	13	-9	-10	12
37	1	11	13	7	-4	10	6	11	11	3	4	2	4	3	7	15	4	1	2	2	10	3	21	2	-5	1	6	22	8	16	5	-2
38	28	11	-8	3	-16	-6	-7	11	12	-9	3	3	-3	1	20	8	-18	4	-6	11	1	13	10	-8	13	-12	-20	11	26	14	-7	9
39	10	10	5	14	-17	20	-10	20	13	-5	10	-8	23	-17	16	-3	-19	9	-23	7	-14	15	8	-11	31	-8	8	-5	17	8	-13	10
40	-5	2	8	2	-11	13	-11	9	2	-2	-3	2	13	-10	15	9	1	1	-8	4	-7	13	6	2	11	-5	7	-2	11	12	9	1
41	3	8	-6	-4	-5	10	1	9	15	-13	-5	4	9	1	7	11	-11	7	-9	2	-4	6	17	-1	15	-5	6	6	11	23	-4	7
42	9	-6	15	4	-5	53	-15	22	3	6	-1	-14	39	-21	7	-4	9	6	-10	14	-11	5	-7	5	16	3	37	-15	9	-5	0	2
43	-11	-1	-5	3	-3	15	-8	5	12	-1	-2	-14	18	-5	3	-10	-4	6	-8	-5	-0	8	-9	-9	14	-3	8	-22	-2	-4	3	7
44	6	24	-1	2	-9	-4	6	-3	25	-7	-2	15	-4	2	8	21	-1	5	2	-4	3	10	26	4	6	-7	-3	16	12	33	-9	5
45	9	15	10	6	1	14	-14	9	13	-2	8	6	9	-20	9	2	-6	3	-1	1	-7	13	12	8	15	-4	8	8	16	16	6	12
46	12	13	-11	1	-9	6	-4	12	10	-10	4	1	10	-1	15	13	-12	5	-7	1	-10	11	15	-9	11	-12	-2	9	20	17	-13	11
47	2	10	9	-1	-2	6	-7	17	10	1	6	8	9	-13	11	17	2	1	-6	8	-4	17	24	1	15	-5	-1	12	18	25	-3	4

VAR	33	34	35	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11
34	-22													
35	31	-15												
W1	3	-8	-1											
W2	-3	9	3	19										
W3	1	-1	-3	30	15									
W4	-16	22	-26	20	2	35								
W5	-2	8	-9	12	27	26	26							
W6	-1	2	-4	28	1	16	29	28						
W7	-21	32	-13	2	12	7	27	29	15					
W8	-12	1	-8	-6	-6	-8	16	13	9	18				
W9	6	-5	3	30	11	25	13	15	31	5	-1			
W10	-1	11	-12	28	32	23	30	28	23	8	34			
W11	-1	1	-4	26	-8	33	33	21	49	12	7	27	23	
W12	2	-1	-15	35	21	28	33	36	36	17	-1	37	52	32

Main Study Factor Analysis of OPSCI Items

1. No of subjects = 422

2. Pearson's product-moment method of correlation used to generate the matrix. (see preceding page)

3. Communality Estimates

Variable	Communality	Variable	Communality	Variable	Communality
1	.237	13	.408	25	.295
2	.270	14	.245	26	.203
3	.417	15	.273	27	.256
4	.288	16	.309	28	.301
5	.436	17	.358	29	.337
6	.423	18	.223	30	.403
7	.352	19	.431	31	.233
8	.332	20	.181	32	.273
9	.311	21	.269	33	.379
10	.359	22	.237	34	.318
11	.189	23	.357	35	.301
12	.386	24	.257		

4. Principal factoring method was employed with an iteration procedure to improve the estimates of communality.

5. The number of factors to be retained following rotation was limited to seven.

6. The Varimax method of rotation was used.

APPENDIX G

CHARACTERISTICS OF THE SUB-GROUPS IN THE MAIN STUDY SAMPLE

Characteristics of the Sub-Groups in the Main Study Sample

		Sample Sub-Groups						
		Poly Wales	Car Offs	JCs	Nurses	OU	ERC	Total
	N	55	31	73	19	67	177	422
	%	13.0	7.3	17.3	4.5	15.9	41.9	100
Sex	Male	54	14	43	1	51	142	305
	Female	1	17	30	18	16	35	117
Age	16-25 yrs	50	14	12	15	5	42	138
	26-35 yrs	4	10	28	3	32	55	132
	36-50 yrs	1	6	24	1	28	60	120
	51 + yrs	0	1	9	0	2	17	29
Educ Level	Degree	1	20	9	0	30	4	64
	HND/Diploma	21	3	3	0	9	1	37
	'A'/'H'Level	21	2	18	16	13	16	86
	OND/Diploma	12	0	3	0	2	9	26
	'O'/Trade/Comm Certs	0	5	34	3	11	52	105
	Apprenticeship	0	0	4	0	1	15	20
	No Quals	0	1	2	0	1	80	84
Emp. Status	Employed	37	31	73	17	63	30	251
	Unemployed	18	0	0	1	3	122	144
	Inval.Benefit	0	0	0	1	1	25	27
Occup.	Prof/Sen.Managem.	0	9	2	0	28	3	42
	Line Man/Tech.	55	15	31	0	22	7	130
	Comm./Pers.Servs.	0	7	29	19	15	46	116
	Skilled	0	0	11	0	2	26	39
	Semi/Unskilled	0	0	0	0	0	94	94
	Not Ascertained	0	0	0	0	0	1	1

* See section 7.9 for full details of how each sub-group was sampled.